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Original Communications.

ARTICLE I. — *General Review of Medical Progress and News.* Prepared by J. H. ETHERIDGE, M.D., Chicago.

"PARTURITION NOT NECESSARILY A PAINFUL PROCESS."

Under the above caption, Dr. J. S. Wilson, of Atlanta, Ga., in the *Atlanta Medical and Surgical Journal*, for August, 1872, offers some very refreshing and sensible remarks on an old subject. He first reviews the nervous supply of the uterus, and in it finds no reason for expecting pain when the organ is in a normal condition. Great emphasis is laid upon this "normal condition," and as all physicians know that parturition is or ought to be a "normal" process, he certainly has much, theoretically, to confirm his assertions. Secondly, he substantiates his position practically or experimentally, and herein he becomes intensely interesting to every medical man. Hear him:

"Case 1. Mrs. ——, had been confined three times—each labor very severe—and has suffered from most of the multiform 'diseases of pregnancy.' In her fourth pregnancy she was subjected to the hygienic course (yet to be mentioned), and escaped most of

the ailments of pregnancy, while parturition was effected in three hours from the beginning, with an almost painless expulsive stage of half an hour, the work being accomplished with only three or four contractions. In her fifth pregnancy she had the same or even greater immunity from the diseases of pregnancy than in the fourth, under similar treatment. In this she was delivered in three hours from the beginning of labor, with not more than two expulsive efforts, and these were attended with scarcely any pain. In her sixth labor, dilatation was accomplished in twelve hours by *painless contractions*, and expulsion was effected in twenty minutes, with six strong and almost painless contractions; and this after a non-child-bearing period of twelve years, during most of which time she had suffered more or less from ulceration of the womb."

"Case 2. Mrs. C., æt. 17—primapara—short stature, firm tissues; closely built but well formed. Subjected to preparatory treatment; was delivered in about six hours from the beginning of labor, with a very short and almost painless expulsive stage. So little complaint was made that I hardly knew when the child was born, though present all the time; and the patient did not suppress her complaints, for she expressed surprise that her labor was over so soon and with so little pain. There was no hemorrhage, no bad smell, or other disagreeable accompaniment of childbed."

"Case 3. Mrs. S., æt. 18—well formed—health good—primapara—subjected to preparatory regimen. Labor six hours—expulsive stage short, only one or two contractions finished it, and she said she felt scarcely any pain. In her second confinement, after the same previous treatment, she was sick three or four hours, with expulsive stage twenty minutes long and almost painless. No accidents—recovery good. In her next labor she was sick only forty-five minutes from first pain; only nine contractions in all, seven dilatatory and two expulsive, almost painless."

"Case 4. Mrs. F., æt. 25—good health—well formed—third labor. Previous two labors severe. Treated in this (the third) with usual preparation. Labor four or five hours—expulsive stage thirty minutes, little pain; no accidents of any kind."

"Case 5. Mrs. H., æt. 18—form and health good, but had been delicately raised. Treatment as in previous cases. Labor six hours—expulsive stage forty-five minutes—scarcely any pain; no accidents of any kind."

A short analysis of the cases reported is then given, and the writer passes on to consider the Bible aspect of labor. Every physician, with a heart in him, most assuredly agrees with Dr. W. in the expediency of lightening labor-sufferings as much as possible. A review of medical literature of the past twelve or fifteen years shows many acrimonious disputes as to the duties of physicians in using or not using chloroform in the lying-in room: one side claiming that it is wrong, because it was said to woman after the fall, "In sorrow [pain] shalt thou bring forth children."

The principal means of the preparatory treatment may be thus summed up: "Good, digestible, laxative diet, in *moderate* quantities; cooling, bland, unstimulating drinks; avoidance of stooping or doubled positions; loose, comfortable clothing; pure air by day and night; abundant sleep; sunlight; and, last though not least, general and local baths, followed by friction of the skin."

Thus it is seen that nought but hygienic measures are resorted to—no medicines or medication of any kind. Hygienists have long claimed that pregnant women ought to live as thus recommended, and have also claimed for them precisely the same results, so admirably set forth by Dr. Wilson. If our memory serves us rightly, Mrs. Elizabeth Cady Stanton, before a Chicago audience, two years ago, detailed the particulars of her personal experience in pregnancy with this preparatory treatment, with an almost painless labor following.

In particularizing, it may be necessary to quote the writer's words on bathing: "To subdue the nervous and vascular excitement incident to pregnancy, and to depurate the blood, there is nothing so safe and effectual as tepid, cool, or even cold baths. These baths abstract excessive heat, equalize the circulation, remove internal congestions, and strengthen the whole system, thus preparing it to furnish suitable elements for the new being, and to pass safely through the critical time of parturition. The feelings of the patient may be safely consulted as to the temperature of the water; the sponge bath or wash-down is the best mode of applying it. Of course, the shower bath, and all applications that cause violent shock, should be avoided. Pregnant women generally bear cold water remarkably well, but they cannot well tolerate violent impressions of any kind. The sponge bath should be used every day, or every other day, from the beginning of pregnancy, and the

hip bath should be resorted to once a day during the last month or two. The temperature of this should be moderate, and it should not be continued more than five or ten minutes each time. The cold hip bath, with the general baths recommended, places the system in the most favorable condition for parturition, and, I may add, is one of the most, if not the most, effectual of all the means at our command for preventing or allaying that morbid irritability and that excessive rigidity which are the great, the principal, if not the sole, causes of the pains of labor."

Cannot some readers of the JOURNAL put these precepts in force, and, within the ensuing year, write out their experience for publication?

ELECTROLYSIS IN OVARIAN TUMORS.

Dr. Fieber reports, in the *Vienna Medical Press*, a cure of an ovarian tumor by means of electricity through needles, and earnestly recommends in all cases the trial of this means before facing the awful chances of ovariotomy. He says:

"A seamstress, æt. 32 years, had a tumor of the size of a man's head, slightly painful on pressure, hard, nodulated, extending from half an inch below the umbilicus down to within an inch above the symphysis; its breadth was six inches. Diagnosis: ovarian cyst of the right side.

"June 6th, 1870, a large gold needle with a copper pole, connecting with a Daniels battery of twenty elements, was inserted one and a half inches below and to the right of the umbilicus, the chain was then closed to the left of the umbilicus. While the needle was inserted, the patient experienced a sensation of severe burning, which, however, soon disappeared. After seven minutes the needle was withdrawn; reaction slight.

"Up to Nov. 30th, 1870, electrolysis was repeated eleven times. Subsequent inflammatory manifestations occurred, but rarely requiring poultices and small doses of morphine. The needle was inserted into different places. Till the end of November the swelling diminished but little; afterwards it decreased rapidly. March 10th, 1871, the cyst was reduced to the size of a hen's egg."

All experimenters in the application of electrolysis to tumors agree that at first, in most cases, the reduction in size of these growths proceeds with marked slowness for months, when suddenly they disappear as rapidly as they before decreased slowly.

This treatment of dropsy of the ovary is by no means a novel one. Many years ago Sir James Simpson suggested it, in an article on ovarian dropsy, in the "Library of Medicine." Subsequently he tried it, but so severe an inflammation was lighted up that the woman died. Since then he never used it.

A Dr. Franklin, of St. Louis, Mo., recently reported a case of ovarian tumor, of three years' growth, disappearing after treating with electrolysis. He used three gold needles, and a twenty cup battery. The patient was treated at one sitting. "Preparing the patient for the operation, adjusting the battery, and applying over the tumor, which was the size of a large cocoanut, a heavy steel ring, forcibly held downwards by an assistant, I plunged into the sac, one at a time, the three gold needles prepared for the purpose. Now, placing the positive electrode upon the back, and the negative in contact with the needles, the current was kept up for nine minutes through the sac. The patient only complained of pain and smarting in the back." Soon it (the battery) was again applied, and the current prolonged sixteen minutes. The skin around the needle showed evidence of cauterization. Some febrile action ensued, lasting forty or forty-eight hours. Patient walked about in a week, and in three weeks the tumor had so far disappeared that it seemed no larger than a pullet's egg. Subsequently she reported that she never felt better in her life.

ELECTROLYSIS IN TREATMENT OF PALATO-NASAL POLYPI.

Dr. Paul Burns communicates, in a long article to the *Berlin Clinical Weekly*, July, 1872, his experience with that of other operators—eight cases in all—in the destruction of nasal and other polypi by electrolysis. One pole is held in the hand, and the other, by means of a wire, is applied to the tumor.—(*The Clinic.*)

HOW DO THE SPERMATOZOA ENTER THE UTERUS?

An article, with the above heading, appears in the *St. Louis Medical and Surgical Journal*, for September, 1872, from the pen of Dr. Joseph R. Beck, of Fort Wayne, Ind., and is certainly quite readable. The gentleman has made *two* observations, and he is thereby enabled to wipe out Montgomery, Koelliker, Byford, Sims, Thomas, and all lesser luminaries, with their years of patient labor and study, in a masterly fashion. After quoting from the fore-

going writers, he proceeds to promptly demolish them by stamping their ideas of the mode of entrance of the spermatozoa into the uterus as *puerile* and *absurd.* The independent motion of the spermatozoa, and the capability of progression while in parts congenial to such progression, as the vagina and cervix uteri, are totally insufficient to explain the point. The writer is certain that no mention has ever been made of the *true* mode of this entrance. He says:

"The only manner in which this subject can be positively set at rest, is to observe the os and cervix uteri *during the sexual orgasm. I have made two such observations, and know, beyond the peradventure of a doubt, that all the descriptions of the modes of entrance of the semen into the uterus, heretofore described, are totally and wholly, both in the main and detail, theoretically and practically untrue.*"

These two observations were made within twenty-four hours of each other. He copies from his case book:

"Aug. 7, 1872. Mrs. H. L., æt. 32 years, of strongly-marked nervous temperament—had one child—one abortion—last pregnancy six years ago," etc., etc. Diagnosis he determined was prolapsus uteri in second stage. Calling on his patient the ensuing day to adjust a McIntosh stem pessary, he was admonished to be very careful as he made the digital examination, as she was "very prone, by reason of her passionate nature, to have the sexual orgasm produced by very slight contact with the finger. Indeed, she stated, that this had more than once occurred to her when making digital examination of herself. Here then was an opportunity, never before offered to any one to my knowledge, and one not to be lost upon any consideration. Carefully separating the vulvæ with my left hand, so that the os uteri was brought clearly into view in a strong light, I swept the right forefinger across the cervix twice or three times, when almost immediately the orgasm occurred, and the following is what was presented to my view:

"The os and cervix uteri had been firm, and generally in a normal condition, with the os closed, so as not to admit the uterine probe without difficulty; but immediately the os opened, to the extent of fully an inch, made five or six successive gasps, drawing the external os into the cervix each time powerfully, and, at the same time, becoming quite soft to the touch. All these phenomena

occurred within the space of twelve seconds time certainly, and in an instant all was as before; the os had closed, the cervix hardened, and the relation of the parts had become as before the orgasm."

He states that there was "intense congestion of the parts during the 'crisis.'" He questioned her "as to the nature of the sensations experienced by her at the period of excitement, and she is very positive that they were the same in *quality* as they ever were during coition, even before the occurrence of the prolapse, but admits that they were not exactly the same in *quantity*, believing that during coition the orgasm had *lasted longer*," etc. He likens the action of the os during orgasm to the mouth of a "sucker—a species of fish," that "passes the water through the mouth and out at the gills. * * * Precisely such a motion does the uterus make during the period of sexual excitement."

Of course, no conception takes place unless there be an opening of the os uteri during copulation, *i. e.*, unless there be orgasm present. Consequently, Drs. Montgomery, Koelliker, Byford, Sims, Thomas, and all other physicians, are to disbelieve the statements made to them by many of their patients, that they never experience sexual orgasm and yet bear children. Conceptions without penetration *must* be myths.

CURE FOR THE ITCH.

The following prescription having been recommended for the cure of the itch by a distinguished dermatologist of Paris, and, as I have seen it employed with unfailing success, I take the liberty of transcribing it for the benefit of your readers:

R. Carbolic Acid, one drachm;
Water, one pint.

Or, what is still better, an ointment of—

Carbolic Acid, two drachms;
Benzoated Lard, four ounces.

Three or four frictions in the twenty-four hours suffice to kill the acari, after which a bath of soap and water is to be taken, and the disease produced by these parasites is thus infallibly cured in twenty-four hours.—(*Paris Correspondence of the London Medical Times and Gazette.*)

THE USES OF THE UVULA.

Sir Duncan Gibb, Bart., M.D., LL.D., thus sums up his conclusions on the use of the uvula, in the *London Lancet:*

1st. It acts as a sentinel to the fauces in exciting the act of deglutition when anything has to be swallowed.

2nd. It compresses the soft palate, and holds its posterior free border firmly against the wall of the pharynx in deglutition, so that nothing can pass upwards.

3rd. It modifies speech in the production of loud declamation and the guttural forms of language, by lessening or diminishing the pharyngo-nasal passage when it acts as an elevator.

4th. Its elevating power is increased to the most extreme degree in the highest ranges of singing voice, and is very moderately exerted in the low ranges.

5th. Therefore, in its uses, deglutition and vocalization are the functions that are intimately associated with the uvula, and become impaired, more or less, if it is destroyed, wholly removed, or seriously injured.

MUSCLE AS A CONSTITUENT OF NERVE TISSUE.

(*Gaz. Med. Ital.*, Nro. 52, 1871.) "Tigri has shown the presence of muscular fibres among the nerve-fibres of the cerebro-spinal nerves, and the ganglia of the sympathetic. When an irritation is applied, contraction is caused, and the liquid contents of the nerve-fibres are caused to vibrate, and the motion is conveyed thus centripetally and centrifugally. In reference to these anatomical and physiological peculiarities, he calls the ganglia of the 'sympatheticus magnus,' as well as the large ganglia of the brain, 'nerve hearts.' He considers that the so-called Remak's nerve-fibres are muscular fibres."—(*N. Y. Medical Journal*, Sept., 1872.)

NEW PLAN OF EXTRACTION OF BODIES FROM THE EAR.

Dr. Loewenberg, of Paris, describes a new plan for extracting solid bodies from the ear, as follows: A very small brush is made by rolling and fixing a narrow strip of old linen around a thin wooden handle (a match, for instance), and unraveling its free border to the length of a quarter of an inch. The end of the so-obtained fringe is dipped into a warm and very concentrated solution of glue, and applied to the visible part of the foreign body,

or, rather, the operator leans it against the body by letting it glide very softly, and without exercising any pressure, over it. Previous to the application, the patient seats himself comfortably in an arm chair or on a sofa, and inclines his head towards the healthy ear. He remains in this posture from three-quarters of an hour to an hour after the introduction of the agglutinated brush. This time past, consolidation is generally accomplished and the foreign body can be extracted by gently pulling at the brush.—(*Medical Times and Gazette.*)

ATOMIZED TURPENTINE WATER IN CHRONIC BRONCHITIS AND CONSUMPTION.

Dr. S. Goodwin, of Victoria, Texas, writes that he has lately been using turpentine water, inhaled by means of an atomizer, with signal advantage in cases of chronic bronchitis and consumption, where there was copious expectoration of either mucus or pus, with hemorrhage or violent cough. The turpentine water is prepared with spirits of turpentine by magnesia, in the same way that aromatic waters are commonly prepared by druggists.—(*Medical News.—New Remedies.*)

SEASICKNESS.

Dr. Alderson, in a recent article, in the *British Medical Journal*, promulgates a new theory for this malady. He claims that *shock*, or *cerebral congestion*, is produced by the ship's motion, and from it result all the horrors of *nausea marina*. The sudden and enormous fall of the ship deranges the brain circulation, by suspending temporarily the force of gravitation in bringing the venous blood from the head, and thus is lessened the weight of blood that the heart has to overcome; the heart, freed from bearing this weight, is enabled to propel blood to the head with increased force. Thus we have venous blood from the cerebral vessels retarded and arterial blood accelerated, and there results general congestion of all the brain capillaries. This explanation is well elaborated by Dr. Macdonald, of the Harvard Medical School. It is premised that this effect is produced upon the human system while it is in the upright position. So far—good; but will the theory hold good when persons are lying down? Every one who has been seasick knows that lying down by no means obviates nausea and vomiting. Again, if this theory be true, why are not seamen continually

suffering from cerebral congestion? Why are persons traveling not seasick after a few days' inuring to the ship's motion?

Chambers advances the theory, that seasickness depends on the relaxation of the œsophageal sphincter from temporary paralysis of the involuntary plexus which supply the fibres of that sphincter —said paralysis being produced by the motion of the ship.

Dr. Chapman, of London, says, "The proximate cause of seasickness consists in an undue amount of blood in the nerve centres."

CANCER TREATED WITH CARBOLIC ACID.

The *American Journal of Medical Sciences* contains a report from Surgeon Bill, U. S. Army, of four cases illustrative of this treatment. Two of them were "cured," and the fourth was under treatment at the time of the report.

1st Case. An old man; had had labial epithelioma previously removed, and the disease returned in the cicatrix and could not be removed. Sixteen grains of acid daily for forty-nine days. Disease had then completely disappeared. That was three years ago, and no indications of a return are at present visible.

2nd Case. Similar in situation to the foregoing. Had been excised twice. After its third appearance, carbolic acid, fifteen grains daily, internally, was given. Disease disappeared, and no return noticed thereafter.

Dr. Bill thinks the acid ought to be diluted freely—three grains to the ounce of water.

A NEW DIFFERENTIAL TEST FOR CARBOLIC ACID.

Surgeon Morson, of London, affirms that glycerine will completely dissolve carbolic acid, and will not dissolve creosote. A substitution of the one for the other, makes it very desirable that a ready means of distinguishing them be at hand.

ASPIRATOR TROCAR.

M. Labbe, a young surgeon and sub-professor of Paris, has been doing wonders with the capillary or aspirator trocar. He has, in many cases, punctured the bladder above the pubis, and emptied it, where it was impossible to draw off the urine with a catheter. He prefers Dieulafoy's trocar, as being perfectly innocuous, the wound healing immediately. Many Parisian surgeons already

predict one great disadvantage in this new method, not to patients, but to the future generation of surgeons, as catheterism would run the risk of being altogether put aside. At first, this instrument was only used as an explorer, and was not much larger than an ordinary urethra syringe. This was gradually increased in size, and was then employed for emptying large abscesses and cavities containing liquid. Still later it is so improved as to be adapted to washing out or injecting abscesses or cavities. It may yet even supersede the lancet for phlebotomy, as the risk of air entering is *nil*, and the ligature above the elbow can be dispensed with.

REMOVAL OF PARIS PLASTER BANDAGE.

A strong solution of common salt causes the plaster to crumble, so that the bandage can easily be cut. It also quickly cleanses the hands of the operator from the gritty article used for securing immobility.

STRANGULATED HERNIA REDUCED BY TAXIS AFTER PUNCTURING THE INTESTINE.

M. Demarquay advocated, before the Academie de Medicine, on May 21, 1872, the puncturing the gut with a small trocar in certain cases of hernia, and letting out the liquid and gas by means of Potain's aspirator. His operation on an hernial tumor, thirty-six hours old, after unsuccessful attempts at reduction by taxis and treating with ice, was a marked success. The patient's features had undergone great change, and fever was set up. A congenital, elongated, voluminous, inguinal hernia was found to exist. Having never succeeded in curing this description of hernia by operation, he resolved on puncture. About 120 grammes of intestinal liquid were drawn out, besides considerable gas. The tumor collapsed completely—trocar was withdrawn, and some minutes were allowed to elapse, to see if the tumor would again fill. No renewal of the tumefaction took place, and very slight pressure returned the tumor into the abdominal cavity. Quiet, low diet, and small doses of opium, completed the cure. No ill consequences.

M. Demarquay proposes to apply this new mode of treatment: 1. In all congenital hernias, and to recent hernias which become strangulated at the time of their formation. 2. To old hernias which were quite reducible a few days prior to strangulation, and

in large umbilical hernias that have become recently strangulated. Aspiration should be employed at an early period, when one can be well nigh certain of returning into the abdomen the intestine in an unaltered state and capable of resuming its functions.

THE MONOBROMIDE OF CAMPHOR.

Dr. W. A. Hammond has used this new preparation—consisting of one equivalent of camphor with one of bromine (C_{10} H_{15} O. Br.)—with marked success in infantile convulsions due to the irritation of teething. His experience in this difficulty is limited to two cases. "In each, a grain was given hourly, rubbed up with a little mucilage of acacia. Three doses were sufficient in one, and two in the other case. The children were aged respectively fifteen and eighteen months." In cases of "headache occurring in women and young girls, due to mental excitement and excessive study," it was employed with excellent effect. One dose, of four grains, generally sufficed.

In wakefulness, he thinks it "greatly inferior to the bromide of calcium, or even other bromides."

In a case of delirium tremens, Allen McLane Hamilton, M.D., (in *New York Medical Journal*, July, 1872,) asserts that the monobromide of camphor, in five-grain doses, was of excellent service. He also says that he is convinced that it is superior to any combination of camphor and opium in chordee.

INSTANT ARREST OF EPISTAXIS.

Dr. Marin, of Geneva, states, in the *Jour. de Med. et de Chirurg. Practique*, May, 1872, that, as the bleeding in epistaxis generally flows from only one nostril, and most frequently from the anterior third of one of the nasal fossæ, he was led to believe, that by compressing the corresponding facial artery on the superior maxillary bone, near the ala of the nose, the afflux of blood would be diminished, and the hemorrhage at once be arrested. He has tried this plan in very many serious hemorrhages from the nose, and the expedient has proved perfectly and promptly successful.—(*L'Union Medicale*, 25th May, 1872.)

M. Gubler, of Hopital Beaujon, Paris, recommends glycerine, in tablespoonful doses, morning and evening, in cases of acne punctata—(*Paris Cor. London Times and Gazette.*)

CURE FOR COLDS.

A Berlin correspondent of the *Chemist and Druggist*, recommends the following as a cure for this annoying affection:

"A wide-mouthed glass-stoppered bottle is filled with cotton and the latter is saturated with a mixture composed of—

Acid Carbolic (pure),	scr. iv.;
Liq. Amm. (sp. gr. 0.960),	oz. j. ss.;
Distilled Water,	oz. ij.;
Alcohol,	oz. iv.

The vapors are drawn into the nose frequently during the day, and now and then inhaled into the mouth."—(*The Pharmacist.*)

SUBCUTANEOUS INJECTIONS OF ERGOT IN UTERINE FIBROMA.

Professor Hildebrand, of Konigsberg, Prussia, draws attention to this subject in the *Berlin Clinical Weekly*, No. 25. In 1870 he first used it, daily, on a Polish woman, 33 years old, who had a large fibroma of the uterus, of three or four years' growth. Her hemorrhages were profuse, and nothing previously had succeeded in arresting them. To check them he resolved on ergotine injections, daily, till her next menstruation, when the injections were suspended temporarily. After the menstrual period, which was less painful and profuse than usual, the patient said the tumor was smaller. Measurement confirmed her assertion. The injections were resumed, and from week to week the tumor decreased, till, at the end of the fifteenth week, all vestige of it had disappeared. Other cases were tried, with the same effect—complete disappearance of the profuse hemorrhages, the debilitating serous discharges and the severe pains. Contraction of the nutrient vessels of the tumor doubtless results from this exhibition of ergot, and this strangulation of the growth is speedily followed by degeneration and absorption.

The solution used is composed of three parts of the watery extract of secale cornutum, to seven parts of distilled water and seven parts of glycerine. Langenbeck uses the *alcoholic* solution of ergot, but this is more painful, and more prone to give rise to suppuration, than the glycerine solution. The parts about the navel were chiefly used for injections, because the lower abdomen seemed more sensitive. A few days before and after menstruation slight

hemorrhages follow the punctures, and after ten or fifteen daily injections, the solution flows out again from the orifices. To correct these points, wadding, wetted with collodion, was used immediately after each injection. About a drachm was used daily.

THE CHARACTERISTICS OF SEX IN THE HUMAN SKULL—CONCLUSIONS OF MANTEGAZZA.

We have as yet no fixed characteristics to differentiate the male and female skulls. Very often the feminine cranium assumes the masculine type, and *vice versa*. The marked development of the superciliary arch is the most constant characteristic of the masculine skull, and, by it, we may determine the sex with a certainty almost absolute. The small size of the cranium, its diminished height, the less marked development of the points for muscular attachment on the occipital bone, are the distinctive characteristics most constant in the female skull; if, at the same time, the superciliary arch be almost completely absent, the female sex is almost certainly determined. This is all that science may, as yet, affirm in this regard, and that this may be established as a verity, it is necessary to examine these cranial differences in all the different races.—(*Archivis di Roma fascie*, 2, 1872.—*The Clinic.*)

QUININE.

Dr. Greenhill (It. Monteverdi), of Cremona, Italy, has treated of the effect of this drug on the uterus, in a lately-published treatise, of which the *London Medical Times and Gazette* gives the following summary:

"Bark and its preparations act on the sympathetic, then on the spinal nerves. Thus it produces contraction of the muscular fibres, supplied by the great sympathetic, and especially of the womb, bladder, intestines, and blood vessels. Its effects depend on the dose, and on the condition of the organs acted on. It may restore relaxed organs to their normal state of tone; or, if the tone of these organs be already sufficient, it may induce morbid and excessive contraction. This is shown by its action on the pregnant womb, and especially during parturition. It may, administered imprudently, cause abortion; but in case of languid and feeble uterine contraction, it may accelerate childbirth, and cause the normal expulsion of the placenta. Dr. Monteverdi believes it to be

far preferable to ergot, and less detrimental to mother and child. It takes the place of ergot in all relaxed conditions of the womb, menorrhagia, amenorrhœa and the like. It is the best preventive of puerperal fever, and the best remedy for its early stages. It is injurious in all cases of uterine excitation."

WAR IN LEIPSIC.

"The battle rages hot and fierce in the German Congress of Physicians and Physicists now in session in Leipsic. It is a life-and-death struggle between Vienna and Berlin. The last number of the *Vienna Medical Press* (August 18), contains, in heavy type, the following special

Telegram!

"LEIPSIC, *Aug.* 15, '72.

"In the scientific encounter to-day, between Cohnheim and Stricker, before a brilliant audience, the four Professors chosen as referees, confirmed the statements of Stricker and established the correctness of his preparations. The attempt of Cohnheim to depreciate the scientific investigations undertaken in Vienna, and the Vienna method of work, was repudiated by a stormy protest of the whole association."—(*The Clinic.*)

PERSONAL.

Dr. O. Liebreich, the discoverer of chloral's action, has been appointed Ordinary Professor of Materia Medica in the Berlin University.

Dr. Brown Sequard has resigned the chair of Comparative and Experimental Physiology in connection with the Faculty of Medicine in Paris, which he has held for several years. He is soon expected in New York.

Professor Virchow has recently been elected Dean of the Medical Faculty of Berlin University.

Professor T. Gaillard Thomas has resigned the chair of Obstetrics in the Medical College of Physicians and Surgeons of New York.

PATHOLOGICAL ANATOMY OF DIPHTHERITIS.

The "*Gaz. Hebdom.*," August 2, 1872, contains a paper on the "Gangrenous or Diphtheritic Angina and Croup," by MM. Bouchut and Labadie-Lagrade, read before the Academy of Sciences. The

following are their conclusions: In these diseases there are two kinds of anatomical lesions—the one, primary, due to the ulceration of the mucous membrane, or the presence of false membranes; and the other, secondary, cardiac or embolic. The former are well known, but the secondary—cardiac and pulmonary embolic lesions—have not as yet been described, and deserve to be known, explaining, as they do, the occurrence of death through an entirely special lesion of the lungs and other organs. In the heart there is almost always (fourteen times out of fifteen) an *endocardite vegetante*, with fibrinous deposits, which are the origin of frequent emboli. The lungs frequently (forty-five times out of one hundred and eighty,) contain knots of pulmonary apoplexy, or bloody infarcti, due to arterial emboli, such infarcti being sometimes colorless at the centre, and surrounded by a zone of hyperæmic pulmonary tissue. Sometimes there are knots of purulent infiltration, or even true metastatic abscesses. The lungs also frequently present at their surface, between the lobules, small venous thrombi. These bloody infarcti are sometimes found under the pericardium, among the altered muscular fibres of the heart, and in the subcutaneous cellular tissue, where small metastatic abscesses may be formed. Venous thrombi exist also in the pia mater, the brain, the liver, and in different parts of the body. With these lesions there always coexists a more or less pronounced leucocytosis, which, in a bad case, is very considerable.—(*London Medical Times and Gazette*, Aug. 17, 1872.)

ARTICLE II. *The Panaritium (Felon)—Consequences and Treatment.* By CARL PROEGLER, M.D.

(Continued from page 530.)

It is well known that the felons of the thumb and little finger are the most dangerous, because the flexor pollicis longus has a long sheath which branches out to the root of the hand under the ligamentum carpi volare transversum, and the flexor digiti minimi shows, not always but generally, a communication with the great sheath of tendons of the root of the hand. But even here suppuration does not always stop, reaching often the fore-arm, and in

such cases even life is endangered. Unhealthy granulations, thrombosis of veins, septicæmia and pyæmia cause death.

This picture is not merely a phantasia, but exists in reality, and I myself had occasion to witness two cases of this kind in the surgical wards of Berlin; and Huetter very truly says, in a lecture: "I do not wish that in your later praxis you will get acquainted with the panaritium as a disease leading to death, but I am bound to show you also this characteristic phenomenon of the panaritium, and you must never forget that a felon in its consequences may cause death and really has caused it." Therefore the young and inexperienced reader ought to be on his guard, and make himself thoroughly acquainted with the disease under discussion.

Periostitis is very often caused by the panaritium, and taking into consideration the narrowness of the parts, (the flexor tendon and the periosteum of the phalanges are near together) the posterior wall of the sheath of the tendon forms with the periosteum an almost united tissue, and it is therefore self-evident that every suppurative periostitis of the sheath of the tendon and every suppurative synovitis of the latter endanger the periosteum. Clinical experience shows this abundantly.

We very seldom see suppurative periostitis or suppurative synovitis of the sheath of the flexor tendons running alone; they are generally combined, as already explained. Suppurative periostitis is always a disagreeable complication of the panaritium on account of the neighborhood of the sheath of the flexor tendon, or by following necrosis, but here another danger lurks behind—the danger to the articulations which are lying nearest to the diseased phalanges. Pus finds its way into the small synovial cavity of the phalangeal articulation, and besides necrosis of bone, we have the consecutive state of a suppurative articular inflammation, articular fistulæ, necrosis of cartilage, resorption of cartilage, contraction, and, lastly, anchylosis of the limb.

The reader may ask, What is the bearing of all these specified phlegmonous diseases, arising from the panaritium, upon the function of the fingers? What prognosis can we give?

Prognosis is very bad for the function, but it is rather difficult to picture the manifold and grave functional disturbances which remain after these processes.

Paratendinous phlegmonous inflammation leads either to necrosis

of the flexors, or to a gluing and growing together of the flexors with the sheaths and the paratendinous connective tissue. This process saves the patient the exfoliation of the necrotic sheath, and the public at large looks upon this as a normal process and gives it the name of "worm." It does not make any difference whether the tendon is forced out, or whether it grows together with the surrounding tissue. In the first case, the contractile substance of the muscles is wanting, and consequently cannot move the bone; in the latter case, the phalanges, which ought to be moved, remain stationary. It tears only on the skin and connective tissue. Movement of the anterior phalanges is entirely destroyed.

Stiffness of a finger or articulation amounts to a good deal. The hand is the first moving apparatus of the whole body; one sheath, one articulation less, causes a deficiency in its working. Take for instance the case of the middle finger glued together with the tensors by suppurative inflammation of the flexor tendons. Not only active movement, but even flexure of the finger is destroyed. The shortened tissue on the volar surface cannot follow the stretch of the flexing muscle, and so is flexure of the root of the hand also impaired.

Flexing and stretching of the hand in the metacarpus induces a stiffness of the finger tendons surrounding this articulation. If the movability of one is impaired, movement of the root of the hand is also, and therefore flexing and stretching of the metacarpal articulation cannot properly be done.

In these articulations lies the whole secret of finger movement. It is a unit; if one suffers, all suffer.

The treatment of the panaritium is very simple, if properly and early done. The sovereign remedy for the *initial state and florescence* is *incision*. It ought to be done early, and in such a manner that the whole panaritial growth will be entirely destroyed. It ought at the beginning to be not larger than a few lines, because primary inflammation is not so extensive. Injuries of other organs are not possible because the greater nerves and arteries on the volar surface are very seldom touched on account of the more central position of the panaritium, and even if cut, it is of no importance. The incision ought to be made lengthwise, so as to avoid possible injuries to vessels, etc.

Once in a while it may occur that the *arcas volaris sublimis* is cut, but then the cut ought to be deep, so as to ligate the two vessels.

It is of importance in a rational treatment of the panaritium that the incision be made early. Surgeons ought to emancipate themselves and the laity from the absurd idea that on the fingers or other places, suppuration ought *to get ripe first.* Poultices, salves and other humbug remedies will give rise to necrosis of tendons, a gluing together of tendons, and even contractions of articulations,—in short, useless hands and fingers.

At the beginning of a panaritium there is but little to be detected by fluctuation or other examinations. Huetter, whom I follow, takes a fine probe and touches the central part of the panaritial swelling, asks the patient where he feels by this first palpation the *most intense pain*, and makes there the incision. This point covers in the beginning of the panaritium not more than a quarter of a line, but if taken for the incision no one will be misled.

Huetter says, very correctly, that it may seem insignificant, but he asserts that he never made a useless incision, and every surgeon of experience will agree with him. By early incision, lymphangitis, lymphadenitis, fever, etc., are avoided. Tendons, periosteum and joints are saved from suppuration, and therefore early incision is a real blessing.

After treatment is very simple. A little carbolic acid, warm baths morning and night for the hand, etc., are all that is necessary.

Suppurative inflammation of the tendons, periostitis, and inflammation of joints may be yet properly treated, but the results are sometimes not very brilliant.

The sheath of the tendon ought to be cut lengthwise; suppuration will come to a standstill, and nourishment of the tendons be saved. After sequestra have been removed, passive motion should be instituted, but I warn practitioners *against the use of straight splints* for the finger; stiffness of the finger is always the result. If splints are used, they ought to be curved, and sometimes by this course we may succeed in getting a tolerably good finger for the patient.

Contractions of joints and anchyloses, which follow perforation of pus into the capsular ligaments, may be corrected on general surgical principles; resection is here in its place. After resection

of the joints there will be movements between the phalanges and metacarpi, and we are justified in making resection in yet existing or even beginning suppuration, to foster healing, etc. The small incision done early in the beginning of the panaritium, will save the surgeon from more mutilating cutting, and therefore the panaritium shows that minor but active surgery is great in its result.

ARTICLE III.—*History of the Linear Extraction of Cataract.** By B. B. SCHWARZBACH, M.D., St. Paul, Minn.

It cannot be denied that no branch of practical medicine has made such enormous advances during the last few years as ophthalmology. The ophthalmoscope has lifted the veil which hitherto, in most cases, had proved a bar to the diagnosis of pathological processes in the interior of the eye. In surgical therapy, the linear extraction of cataract is a most important and beneficent acquisition.

It may be interesting to give in a few words the history of the modified linear extraction, as it is now almost universally acknowledged and practiced. The first reliable statements on record in regard to the extraction of cataract by a linear cut are from the last century. Joseph Palucci recommends a linear incision in the cornea in order to remove membranous opacities and contracted lenses. F. von Jaeger, who recognized that the linear cut is by far less dangerous (even in cases where the production of matter followed the operation) than the flap cut, (which is always precarious), adopted this method. After him, Gibson, of Manchester, proposed the adoption of the linear cut as the chief method in the operation for all soft cataracts. Soon after he dropped the idea, because the "spooning" of the substance of the lens from out the pupil is seldom sufficient to remove the more solid centre, and he practiced the linear extraction only as an after-operation of discisio cataractæ. This entire method seeming unfit to remove the whole lens system was soon forgotten, until von Graefe re-adopted the almost banished

* Translated from the German by the author, with the kind assistance of Albert Scheffer, Esq., St. Paul.

linear cut. Even he only made use of the same after discisio cataractæ. Having, however, become convinced of the success of a linear cut of $2\frac{1}{2}'''$, necessitated by the swelling of the lens after discisio, he declared the same adapted to remove certain cataracts in the shortest and safest manner. As contra-indication, von Graefe pronounced the normal consistency of the lens (because the tough substance of the centre prevents evacuation) and unripeness and hardness of the cataract, as unqualified indications of the softness of the lens. As yet no important step had been made in the more general adoption of the linear extraction, because the operation is necessarily followed by the direct irritation of the iris, and especially by such as is caused by the remaining of the lens. Von Graefe attempted the removal of that portion of the iris which is unavoidably affected, in view of the acknowledged anti-phlogistical result of the excision of an iris portion in glaucoma and iridochoroiditis. The benefits of this were:

1st. The prevention of the inflammatory infiltration.

2nd. Of the so often annoying "prolapsus iridis."

3rd. The possibility of bringing the spoon behind the centre of the lens without pressing its body aside.

This procedure was not, as already stated, applicable in all forms of cataract. Undoubtedly in cases where the inner cornear cut extends only $3'''$, while the larger centres of lenses reach the proportion of $3\frac{3}{4}'''$ and more, it is evident that the process of extraction causes more or less serious bruises to the parts cut. Such cases always require the flap extraction.

Encouraged by the experiments of Critchet and Bowman in London, who in cases of the extraction of the largest and hardest cataracts, resorted to a cut extending over the third part of the periphery of the cornea, von Graefe combined the larger cut with the more beneficial healing. The cut in the periphery of the cornea, as practiced by Critchet and Bowman, though sufficiently large ($3\frac{3}{4}'''$), did not dispense with the disadvantage in the healing of the common flap cut. It was therefore necessary, while retaining the linear cut, to apply the same as nearly as possible to the periphery of the cornea in the sclera. In order to attain this end it became imperative to dispense with the use of the lancet, as had been customary, and replace the same by a punction and contra-punction cut, with a knife hardly the width of $1'''$, ending with a perpendicular cut

to the surface of the cornea, thus effecting an almost exact linear opening. Compared with a flap created by a cut of the lancet of equal length, the application of this method produced one of comparatively small dimensions. The peripherictty of the wound brings forth only a slight reaction, which is still lessened by the formation of a flap of conjunctiva, thus securing to the healing of the sclera-cornea wound all benefits of the sub-conjunctiva process. The difference between the channels of the wound produced by this cut, as compared with the one effected by the lancet, lies chiefly in the fact that the first mentioned attains an almost perpendicular direction to the surface of the cornea, in contra-distinction to the cut of the lancet. This perpendicular direction undoubtedly secures more beneficial terms for the evacuation of the lens than the other.

This makes it possible to remove the lens without instruments, or at least with such as cause less damage than those formerly in use. The realization of this possibility was now made the first requirement of the linear extraction. If, as was hitherto the case, in the disadvantageous condition of the inner wound to the evacuation of the lens, it became necessary to make use of large and reliable instruments, it was now sufficient to use smaller ones and those less damaging to the surroundings, for the same purpose and with better effect. Therefore von Graefe replaced the spoon by the hook, the application of which in the rear of the corticalis produced no detrimental pressure. On the other hand, the infancy of the process warranted the expectation of an improvement in the technicality, thus securing the probability of lessening the mishaps. The disadvantage of linear extraction in forming an artificial pupil cannot be denied; but von Graefe, by placing the coloboma of the iris, in spite of the increased difficulty, to the upper part of the eye, gained a decided advantage, both in a cosmetic sense, and an improved function of the organ. Thus, the iridectomy was not performed prior to the extraction, as was the case in the flap cut, but *uno tempore* with the same.

This modified linear extraction now became the object of further investigation and experiments, because its adaptability to the universal method defied contradiction. Especially did von Graefe practice numerous extractions in this manner, and though often operating under very discouraging circumstances, called forth by

the heat of summer, and the condition of the hospital and nursing departments, the results were highly satisfactory. With the exception of cataract congenita, partial cataract, and reacting cataract formation, in which cases discisio proved a more simple and commendable process, all other forms were removed by the modified linear extraction. Out of 300 cases, 94 per cent. were a complete success.

The improvement in the technicality, and the introduction of the sliding process, materially lessened the so-much-dreaded "prolapsus corpus vitrei," so that in comparing the results of this method with the flap extraction, the former proved the more preferable. The shortening of the after treatment, and the less scrupulous nursing of the patient after operation, was a further advantage in linear extraction. The application of chloroform was resorted to in exceptional cases only; a complete narcosis causes too much loss of time, and hinders the action of the muscles of the patient, which is desirable in cases of adherent corticalis, especially in the after cleansing of the pupil. Chloroform was administered only in cases of abnormal stiffness of the eyelids, prominence of the eye, increased reflectory irritation, and timidity of the patient.

The numerous operations superintended by von Graefe proved in favor of the modified linear extraction, by some important rules influencing the technical process. Regarding the flap of the conjunctiva, which greatly accelerates the healing of the wound, it was found that in general the difference in height was of little importance; still, very large flaps, exceeding the dimensions of $1\frac{1}{2}'''$, are not favorable to the healing, and therefore not recommendable, and extension of the flap from the centre is the most practicable. A further caution in the operation is required by the iridectomy. If, in the excision of the iris, the most scrupulous care is not exercised, a growing fast of the corners of same in the channel of the wound, with the necessary consequences, may be looked for. A radical excision of the iris sphincter in the boundary of the external wound is therefore necessary. Experience further showed that the "sliding movement" in the evacuation of the lens produced a far smaller per centage (4 per cent.) of prolapsus corpus vitrei than the application of the hook (10 per cent.) In the first mentioned method a much more complete removal of the corticalis is effected

than in the use of any traction instruments; exceptions are extremely hard cataracts, the evacuation of which is much simplified by the traction method, thereby lessening the pressure. Thus the linear extraction gained more and more supporters, because the results proved that it was not only destined to replace the flap extraction in isolated cases, but to entirely supersede it. All renowned oculists unanimously promulgated the fact, that with the modified linear extraction, a new era in the practice of cataract operation had come.

But, however great the progress attained by the linear extraction through the modifications achieved, numerous as were its supporters in its present form, the disadvantages produced by the traction instruments of whatever shape, soon called forth the wish to discover a method which would dispense with every such instrument. Experiments to this end made by von Graefe, proved that the evacuation of the lens was possible by a pressure applied from without, after splitting the capsula of the lens by the cystotome. Of course the sliding process, which in one case out of every eight of cataract always required the application of a traction instrument, was not sufficient to attain this end, because the larger part of the force applied acts principally as an acceleration of the inter-ocular pressure, without aiding the evacuation of the cataract in preparing its course. This mainly opposed the removal of compact lenses closely adhering to the capsula, because in these cases the sliding movement could only effect a slow and difficult evacuation. The lens must necessarily enter the channel of the wound by the corresponding position of the inner wound and the outline of the lens, provided the pressure is properly applied. This somewhat tampons the wound, and lessens the possibility of prolapsus corpus vitrei.

Von Graefe proved the value of this improvement as introduced by him in his publication of same, through the results achieved from two hundred and thirty operations, and concludes that:

1st. All forms of cataract can be extracted with great precision, avoiding a contusion of the wound, as it still occurred in the sliding movement.

2nd. Owing to the equal filling in of the wound by the lens, the formation of prolapsus was of less frequent occurrence than formerly.

3rd. In most cases a complete evacuation of the corticalis, when remnants of same remain, is made possible by simply withdrawing and re-inserting the spoon.

The pressure applied by a delicate rubber spoon excludes the fear of injuring the surface of the epithelium of the cornea, as was satisfactorily established by the two hundred and thirty cases above alluded to. The course of the knife in this method is somewhat more oblique. A. Weber's experiments proved that an exact closing of large linear wounds was a consequence, and the direction of the channel of the wound is more apt to correspond to the course of exit of the cataract. The height of the flap is enlarged (from 1-6‴ to 1-3‴.) This modification of the linear extraction has established a great progress in this, that not only the advantages of the flap extraction are secured, but surpassed in every respect. All prominent authorities proclaim the modified linear extraction in its present form as the most complete, to the exclusion of all other modes of operation. Its introduction in modern surgery is considered next to the iridectomy in glaucoma, the grandest achievement of the immortal von Graefe. His death in the spring of 1870, was a great loss both to science and humanity. As a surgeon he is perhaps already replaced. (I mention, for example, Hirschberg, in Berlin, Jacobson, in Koenigsberg, and Knapp, in New York.) In vain will we seek his equal in the field of natural history. Men who, as he, in the midst of exhausting activity could still follow grand ideas, return to us only after centuries of time.

ARTICLE IV.—*Electrical Instruments for Medical Use.* By P. S. HAYES, M.D. (Read before the Chicago Society of Physicians and Surgeons, Sept. 16, 1872.)

The first applications of electricity as a remedial agent date from the discovery of the Leyden jar. Nollet and Boze appear to have been the first who thought of the application of electricity for the cure of disease; and soon the spark and electrical frictions became a universal panacea for all of the diseases that may attack the human organism.

The means employed for the generation and application of electricity for medical use are divided into stationary and portable apparatus. The stationary apparatus is subdivided into instruments for generating and collecting static, frictional, or franklinic electricity; instruments for generating galvanic, voltaic, constant, direct, continuous, interrupted continuous, or battery current; instruments for generating induced, faradaic, or electro-magnetic electricity; and instruments for applying electricity to the human subject. Electricity is not inherent in bodies, but is made manifest in them by various causes, among which are friction, pressure, chemical action, heat, and magnetism.

Thales, six centuries before Christ, discovered that amber, when excited by friction, possessed some of the phenomena of electricity; but it was not until near the close of the sixteenth century, that Dr. Gilbert, physician to Queen Elizabeth, showed that this property was not limited to amber, but that other substances, such as sulphur, wax, and glass, also possessed it.

Some of the properties of static electricity are as follows: It is generated primarily either by friction or pressure. It is of high tension, (which is the actual force of an electrical charge to break down any non-conducting substance between two terminating electrified planes), and weak in quantity, and, in consequence of this characteristic, it will leap a space, varying in distance according to the amount of electricity accumulated, and the state of the atmosphere, from a fraction of an inch to the largest space ever traversed by a flash of lightning.

Two bodies charged with the same electricity repel each other; two bodies charged with opposite electricities attract each other. The re-composition of positive and negative electricities, when at high tension, is accompanied by a spark or brush of light. It is capable of producing mechanical effects, such as the splitting of wood and perforation of glass. It will set on fire inflammable material and fuse metals. Its chemical effects are weak, when compared with those of galvanic electricity.

Static electricity is used comparatively little as a therapeutic agent. Duchenne is the strongest advocate of this form of electricity.

The length of this paper will not allow of an extended description of the machines for generating static electricity, but I will

mention those generally used. The plate electrical machine has probably been used the most for generating static electricity for medical use. In 1865, Holtz, a German physicist, invented a machine which took by surprise the scientific world. This machine is known in this country as the Holtz Machine; but in Germany it is called the "Influenz-electrir-maschine." It generates electricity wholly by induction, or influence, and in amount unprecedented in the annals of electrical machines.

At the present time, the Holtz machine, with the improvements suggested by Poggendorff, is the one par-excellent for generating static electricity. The term induction, or influence, has been used, and it is but fitting that the term be defined in relation to static electricity. Ganot defines it as follows: "An insulated conductor, charged with either kind of electricity, acts on bodies in a natural state placed near it, in a manner analogous to that of the action of a magnet on soft iron, that is, it decomposes the neutral fluid, attracting the opposite, and repelling the like kinds of electricity."

Machines for generating static electricity are very uncertain in their action. For their perfect action they have to be thoroughly dry, and every part warmed, and it is necessary that the air be also dry, so that the electricity will not be diffused as soon as generated.

Galvanic electricity is generated by chemical action. It is of large quantity and of low tension. Its thermal effects are very great; with a proper battery, platinum, the most infusible of metals, may be melted. Of the light produced by a battery of six hundred elements, or cells, Despretz says, that "a single moment's exposure to the light is sufficient to produce very violent headache and pain in the eye, and the whole frame is affected as by a powerful sunstroke."

Its chemical effects are no less wonderful than those already mentioned; the molecules of water are torn asunder, and its elements freed from the invisible bond of chemical affinity. By means of its chemical action, Davy discovered the metals sodium and potassium. All of the electro-plating, electro-gilding and electro-typing, are done by this the galvanic electricity. This is the form of electricity used in telegraphing, and man has girdled the earth with iron as a road for this fleet messenger. The essential parts of a cell or element for generating galvanic electricity, are two different

metals and an intervening fluid. Connected with each metal is a wire for conducting the electricity generated. The liquid acts chemically upon the metal which is called the electro-positive, more than on the other, the electro-negative. Positive electricity is generated on the electro-positive metal, and from this passes through the liquid to the electro-negative metal; the converse is true of the negative electricity; therefore the conductor connected with the electro-positive metal conducts negative, while that from the electro-negative metal conducts positive, electricity. The force which is produced by the difference in chemical action on the two metals, is termed the electro-motive force; depending on this difference of chemical action, a series is formed, which is termed the electro-motive series. Of the principal metals, zinc stands at the electro-positive, while platinum and graphite are at the electro-negative end of the series.

The current from a battery constructed on the plan just given, is found to be weakened by three principal causes. The first is, the decrease of the chemical action due to the weakening of the exciting fluid. The second is, local action, which is the production of small closed circuits in the active metal from the impurities it contains. The third is, the establishment of secondary currents, which are in direct opposition to the current first generated in the battery, and which are produced by gases collecting on the metallic plates, to which the term polarization of the plate is applied; this action, long continued, may result in the deposition of the electro-positive metal on the electro-negative plate.

In the various batteries found in the market the causes of the weakening of the current are obviated in some degree. The first cause can never be entirely overcome; and in all, with the exception, it may be, of the specific-gravity battery, this rule holds good, that a battery begins to run down as soon as it is set up. The specific-gravity battery requires but a few minutes attention each week to have a perfectly uniform current for months. The second cause may be obviated by having the electro-positive metal perfectly pure, or, if it be of zinc, by amalgamating it with mercury. The third cause may be prevented by putting the plates in different liquids which are separated from each other by a porous partition or cup of unglazed clay. In the Smee battery this is obviated by covering the negative or platinum plate with a deposit

of finely divided platinum, which prevents the hydrogen from adhering to the plate.

The battery pre-eminent for medical use is the Hill battery, a modification of the specific-gravity battery. The advantages of this battery are its constancy; running for months with but little care; giving an even current of large quantity and small intensity —a current which is par-excellent for medical use; and costing but little to keep it in running order. This battery, as invented by Dr. E. A. Hill of this city, consists of a glass jar, in the bottom of which is placed a disk of sheet copper, which is the electro-negative plate; a gutta-percha covered wire, soldered to the under side of the copper plate, rises to the top of the jar, and is the positive pole. Suspended above the copper plate by a brass hanger is a disk of zinc, concave on its under surface, with a round aperture in the centre. This is the electro-positive plate. To the hanger is attached a binding screw, which forms the negative pole.

The body of the battery fluid is a solution of sulphate of zinc. Crystals of sulphate of copper are added from time to time through the central aperture in the zinc; these rest on the copper plate, and are gradually dissolved, forming a blue layer over the copper, of a solution of sulphate of copper. The two plates are each in a separate solution, and they are kept in these solutions as thoroughly as if they were separated by a porous partition or septum.

Eight years ago, my father, Justin Hayes, M.D., replaced the Daniels battery he had been using with the Hill battery; since which time he has constantly used it. Dr. Hammond, in his late work, entitled "Diseases of the Nervous System," states that he has a battery of this form consisting of thirty cells. Of the cells which form this battery he says that "they possess, in an eminent degree, the peculiar qualities that are essential for a galvanic battery for therapeutic purposes."

In a galvanic battery for medical use the positive plate of one cell should be connected with the negative plate of the next throughout the battery—the positive electrode being connected with the positive pole at one end, while the negative electrode is connected with the negative pole at the other end of the series forming the battery. Should it, however, be desirable to use only a part of the cells, one of the electrodes may be attached to the corresponding pole of an

intermediate cell. This is facilitated by means of a switch or plugging board, or, as Dr. Hammond terms it, a "current selector," which is so arranged that any number of cells, from one to the full capacity of the battery, may be employed, at the option of the operator. To modify the current still more than can be done by the switch board, an instrument, termed a rheostat, is sometimes employed. The rheostat is constructed on the principle that a metallic wire resists the passage of an electrical current through it, proportioned directly as to its length and inversely as to its section. The unit of resistance generally employed in this country and England for graduating rheostats, is the Ohmad or British Association unit. In the manufacture of some rheostats, however, Sieman's unit, which is the ninety-five one-hundredth of an Ohmad, is employed. For medical use the rheostat should be so arranged that the resistance of any number of Ohmads, from 10 up to 2200, can be employed, as desired.

Dr. Neftel recommends that the rheostat be used in an accessory circuit. We use it in this manner, and find that we are thus enabled to treat either the eyes, ears, or any of the delicate organs or nerve-centres of the most sensitive person. The patient between the electrodes completes the main circuit, while the rheostat is placed in an accessory circuit, which it either completes itself or with the aid of a galvanometer which shows the strength and direction of the current and the resistance interposed by the rheostat. To illustrate the principle on which a rheostat so arranged works, let us suppose the resistance of the human body to the passage of an electrical current to be equal to 1000 Ohmads; now if there is no resistance interposed in the accessory circuit by the rheostat, there will 1000 times more electricity pass through the accessory circuit than through the circuit in which the person is placed; but if the resistance of 1000 Ohmads be interposed in the accessory circuit, there will just as much electricity pass through the one circuit as through the other.

The galvanometer is an instrument which may be made to fulfill three principal indications. It will inform you if you have a current at all, and if properly constructed you can approximately tell the quantity and intensity of the current. This you cannot tell exactly, as there is no uniform standard by which the galvanometer is made. Yet it is accurate enough for all therapeutic purposes.

The law which governs the manufacture of this instrument is as follows: If an electrical current be passed above or below a magnetic needle free to move on its axis, and which is in the magnetic meridian, the needle will be deflected, and tend to assume a position at right angles to the direction of the current; but as soon as the current is disconnected, the needle will again assume the direction of the magnetic meridian.

An instrument, termed by Dr. Hammond a "current modifier,"—which consists of a tube of glass or of some other non-conducting material, filled with water, closed at one end by a metallic disk connected with the battery, and in the other end is fixed a movable metallic piston, connected with a wire, which is either connected to an electrode or completes an accessory circuit,—has been used in place of the rheostat. When the piston is pushed against the metallic disk at the end of the tube, a continuous metallic circuit is established, but by withdrawing the piston the resistance of the water is interposed between it and the metallic disk, and the farther the piston is withdrawn the greater will be the resistance. When the "current modifier" is used in the galvanic circuit, the water in it begins immediately to be polarized, the metallic disk and piston acting as electrodes, oxygen collecting on the one, while hydrogen collects on the other electrode. The collecting gases soon accumulate in such quantities as to overcome in part the adhesive attraction which exists between them and the electrodes, and are continually being given off, thus constantly changing the surface of the electrodes, which are exposed to the water, and rendering the resistance irregular and uneven, and the gases which accumulate on the electrodes produce a current in the opposite direction. The polarization may be obviated by using a solution of the sulphate of zinc and a pure zinc disk and piston, but in this arrangement the one will be corroded while the other receives a deposit of zinc.

Between the patient and the battery in the metallic circuit there should be a commutator or current changer, by means of which the direction of the current may be changed instantly without disturbing the electrodes.

An apparatus called the current interrupter is sometimes of value in the diagnostic use of electricity. A simple form of this instrument consists of a spring in the metallic circuit, so arranged that

the current can be made and broken by intermittent pressure on the spring. The current can thus be broken either as slowly or rapidly as the operator may desire.

Batteries for surgical use may be divided into those for galvanic cautery and those for electrolysis. Batteries for the galvanic cautery should consist of but few cells, with a large surface and considerable electro-motive power. Middeldorpff's apparatus is composed of four large cells of Grove's battery, each of which consists of a cylinder of zinc with a surface of 312 square inches, immersed in dilute sulphuric acid, and separated, by a porous cup containing nitric acid, from the platinum plate, which has a surface of 250 square inches.

In Grenet's apparatus the plates are of zinc and graphite, and the exciting fluid consists of one part of sulphuric acid, five parts of water, and one hundred grammes of the bichromate of potassium. There is, however, this objection to the apparatus, that it has to be continually oxygenated by blowing air into the solution by means of a pair of bellows.

For electrolysis any galvanic battery suitable for medical use may be successfully employed.

Induced electricity occupies a place intermediate between the galvanic and static electricities. Induced electricity may produce violent physiological, luminous, calorific and chemical effects, and can give rise to new induced currents. The intensity of the shock produced by the induced currents is comparable in its effect to electricity in a high state of tension, as is found in static electricity; but as the induced current acts on the galvanometer to deflect the needle, it is present not only in a state of tension, but also in a dynamic condition, in which it resembles galvanic electricity.

In 1831 Faraday discovered that a galvanic current is able, by induction or influence, to develop electrical currents in conducting wires. For example: let two wires be placed parallel to each other a short distance apart, one of the wires being attached to a battery and the other to a galvanometer; the instant that the battery circuit is completed, (the making of the circuit, as it is termed,) the needle of the galvanometer will be deflected; and by the direction the needle is deflected, it is ascertained that a current is developed in the wire which is in connection with the galvanometer, and that the direction of this current is opposite that of

the galvanic current. This is the current on making, or the inverse induced current. Its duration is only instantaneous, as the needle immediately returns to zero. Now, if the galvanic circuit be broken, a current is induced in the wire connected with the galvanometer, which has the same direction as the galvanic current, and directly opposite in direction to the inverse induced current. This is the current on breaking, or the direct induced current. Faraday called these currents of induction. If, instead of the wires being parallel, they are insulated and coiled in the form of spirals or helices, the induced current will be increased. The helix which is in connection with the battery, is called the primary coil, and should be the smallest in diameter, so that it will fit into a cylindrical space in the centre of the outer or secondary coil. What has been said in regard to inducing a current in a wire insulated from the one completing the galvanic circuit, may also be applied with equal force to the one in the galvanic circuit. When this wire is coiled into a helix, the current, on making and breaking, is rendered more intense, which phenomenon Faraday refers to the inducing action which the current in each coil exerts upon the adjacent coils. These currents are known as the extra, or the so-called primary currents. The current generated upon closing the circuit is called the extra current on closing, or the inverse extra current, which is in a direction opposite that of the galvanic current. That generated upon opening is the extra current on opening, or the direct extra current, which has the same direction as the galvanic current, and which it strengthens. A magnet introduced into the centre of a spiral, induces, at the instant of introduction, a current in the spiral. Upon withdrawing the magnet, another current, opposite in direction to the first, is induced. These currents compare with the currents induced by the galvanic current. If, now, a core, which consists of a piece of soft iron, or, better, a number of soft iron wires varnished so as to be insulated from each other, be introduced into the primary coil, and the galvanic circuit be made, the core is instantly rendered a magnet, and produces the same effect as introducing a permanent magnet would. The instant the current is broken, the core ceases to be a magnet, and operates as though the magnet had been removed. This action of the core seconds the action of the

galvanic current, and increases in intensity and quantity both the extra and the induced currents.

The requisites for an induction apparatus for medical use are: First, a core, which should either be a movable one or have a movable brass or copper cylindrical cover, for increasing or diminishing the current. Second, a primary coil, the wire of which should be large, not smaller than No. 16. From this coil branches should be taken, in order that the extra or primary currents can be used. Third, the secondary coil, the wire of which should be comparatively large, not smaller than No. 26. Fourth, a rheotome, or current interrupter, for interrupting the galvanic current. The usual form consists of an electro-magnet, a spring with an armature at one end, and a platinum pointed screw, which rests against the spring. Through this screw the electricity passes to the spring, and from thence around the electro-magnet, thereby rendering it magnetic. This magnet then attracts the armature, which, being drawn towards the magnet, breaks the connection; the electro-magnet then ceases to be magnetic, and at the same time to attract the armature, which, by the recoil inherent in the spring, is carried back to the point of starting, only to repeat again the operation just described. The rapidity of the vibrations may be governed in a measure by regulating the force by which the screw presses on the spring. The current should be broken regularly and evenly, for an uneven current is very disagreeable to the patient. Fifth, a commutator, as described under galvanic electricity. You may ask: What is the need of having a commutator, when the induced current is made up of two currents, opposite in direction to each other, a "to-and-fro current," as it is sometimes called, and each one deflects the galvanometer as much in one direction as the other one does in the opposite direction? Ganot gives the answer when he sums up the properties of induced currents, in the following words: "The direct induced current and the inverse induced current have been compared as to three of their actions: the violence of the shock, the deflection of the galvanometer, and the magnetizing action on steel bars. In these respects they differ greatly; they are about equal in their action on the galvanometer, *but while the shock of the direct current is very powerful, that of the inverse current is scarcely perceptible.* The direct current magnetizes to satu-

ration, while the inverse current does not magnetize." Sixth, a rheostat, or "current modifier," for modifying the current still more than can be done by the core or its cover. The objection made to the "current modifier" under the galvanic current does not apply to it when used with the induced currents. Seventh, the battery for inducing the electricity. This should consist of one cell, with a large metallic surface of the plates, so that the inducing current may be of large quantity and small intensity, which characteristics it imparts in a measure to the induced currents. A Hill cell should present a zinc surface of at least 100 square inches.

The poles of the secondary as well as the extra current, are usually marked positive and negative.

The poles of the extra current are so marked from the corresponding poles of the galvanic current, which current forms one-third of the extra current, the other two-thirds being made up of formed by the direct extra, (which has the same direction as the galvanic), and the inverse extra currents.

In the secondary current, the poles of the direct induced current are the ones which give the distinction to the poles.

The electrode connected with the positive pole of an apparatus constructed on the principles just laid down, seems to exert a constringent action, while the negative relaxes. More attention should, I think, be given to the electrodes of the induction apparatus, and the position in which each is applied in the treatment of disease, than is usually done.

As a general rule the positive should be applied over the diseased or painful part. With this form of apparatus the biting intensity of the small machines sold for medical use is avoided, and the deep-seated structures and organs are reached with a power otherwise unattainable. The current is ofttimes felt deep in the muscles by the contractions it produces before the sentient nerves of the skin are acted on to any extent.

Silver is the best conductor of electricity known. If the conductivity of pure silver be represented by one hundred million, that of distilled water will be represented by the fraction one one-hundredth. A solution of the various salts are much better conductors than pure water. Water constitutes in the human subject between two-thirds and three-fourths of the entire weight

of the body; and when we consider that all of the various salts found in the body are in solution in greater or less quantities in the various fluids found in it, we can readily see that, inside the epidermidal layer our bodies are better conductors than pure water. The epidermis contains less water than any other portion of the body, not excepting the teeth.

In proportion to the thickness of the epidermis is its resistance to electricity. If a dry electrode is applied to the skin, its effects are limited almost wholly to this tissue; but if the electrode be moistened with water, or, better, by water holding in solution one of the various salts, the resistance of the epidermis is in a great measure overcome, and the deeper-seated structures are reached.

If the body be placed in a tub constructed of non-conducting material filled with water, and an electrical current be made to pass through the water, the body will come in for a considerable share of the electricity. As electricity passes through the water it assumes the form of an ellipsoid, in consequence of the inferior conductivity of the water. In a body placed in the water between the electrodes no one point is effected more than a neighboring one; and thus all straining of separate organs is avoided. Should it be thought necessary to constringe, relax, or act upon any one portion of the human frame while in the water, the appropriate electrode may be placed on or over the part, while the opposite pole is connected with the electrodes of the tub. By this arrangement the electricity is radiated from the local part in every direction, so that no part is strained by the current.

An apparatus somewhat approximating the one just described, was invented and patented by the late Dr. Young, of Cleveland, several years ago, and was, as such things always are at first, very crude. The use of his patent was purchased by Dr. Justin Hayes, eleven years ago, who brought the apparatus to this city and used it in his practice as one of the means for the treatment of chronic diseases. This he found to be inefficient and cast it aside, and invented the one he now uses, which consists of a wood or soapstone tub, with stationary electrodes on the sides, and at the foot and head; each of these electrodes is connected with a key on a keyboard, and by means of the key can be made positive or negative or be thrown out of the circuit altogether. Thus any

part or the whole of the body may be included in the circuit at once without touching the patient or tub.

Not only can the induced current be used in this apparatus, but also the galvanic can be connected to the key board and used. The temperature of the water used in the bath should not be less than 96° Fahrenheit, because electricity in a cool or cold bath stiffens the patient. The various salts and acids may be advantageously introduced into the bath. Should the sulphate of iron be used, its coloring property may be destroyed by the addition of sulphuric acid.

Of all electrodes for medical use, the hand is one of the best, but all hands are not good electrodes. The old zinc cylindrical electrodes are fast being superceded by those of a better pattern; as they were clumsy and inelegant, and did not meet the demands of the practitioner. The copper, acorn shaped, and silver plated electrode which was made for Dr. J. Hayes, and is at present used in his practice, fulfills the greatest number of indications of any electrode for general use.

The metallic brush is the form of electrode generally used when it is desirable to confine the action of the current to the cuticle. There are in the market electrodes for the urethra, vagina, uterus, pharynx and various other mucous surfaces situated near the external orifices of the mucous membrane. All of these electrodes may be purchased and used, but with what result? I had a patient say to me the other day, who had had one of these urethral electrodes introduced and the current applied to the prostate gland, that he "had rather die than have it done again, the operation was so painful."

Just within the horny ring that surrounds the orifices of the mucous membrane, the epithelial covering is so thin—in many places there being but a single layer—and the sensibility is so heightened, that anything but the normal secretions, excretions and ingesta produce irritation and pain, and the pain and irritation produced by the introduction of the electrode and the application of the electrical current is generally more than sufficient to balance the good produced, unless you wish to produce some profound revellent action, and even in this case the application of the current to the adjacent cutaneous surfaces in such a manner that the current may traverse the affected parts is often of much more value.

The electrodes for surgical use are those for cauterizing and those for electrolysis and electro-puncture. Electrodes for cauterizing consist of a fine wire of platinum, each end of which is connected with copper conductors, fixed in a suitable handle so that the current can be made and broken by the pressure of the finger. The resistance to the passage of the current is so great that the electrical force in part is converted into heat, which renders the wire incandescent. When it is necessary to cauterize a large surface, the platinum wire may be made to surround a porcelain button, which is rendered white hot and then quenched in the tissues to be cauterized. The electrodes for electrolysis and electro-puncture consist of one or more fine gold or gilt steel needles; these are sometimes termed acupuncture needles.

One of the most popular portable galvanic batteries is the Stohrer battery, which consists of a number of the Grenet cells described under batteries for surgical use, arranged as a compound battery. Each cell contains, when charged, about three ounces of fluid. The cells can be raised or lowered so that the plates can be immersed in the fluid when in use and be out of the fluid when not in use.

A year ago, Dr. Peck, at the instance of Dr. J. Hayes, had constructed by Bliss, Tillotson & Co., for his use, a portable instrument which combined the galvanic and induced currents in a more compact, complete and simple form than had ever been done before. The battery consists of fifteen Grenet cells, connected with a plugging board, which is so arranged that by the introducing or withdrawing the plugs some seventy different combinations can be made. For instance, all of the electro-positive and all of the electro-negative plates can be connected so as to form a battery of one cell; or, they may be combined so as to form a compound battery of from two to fifteen cells. The number of cells may be increased or diminished, one at a time. I have just had a machine made somewhat similar to Dr. Peck's. The battery is of the specific-gravity kind and consists of fifteen cells. Sawdust saturated with the solution is interposed between the plates. The united superficial area of the zinc plates is 100 square inches. The instrument contains a galvanometer and rheostat, and is the most perfect portable instrument that I have a knowledge of. Bliss, Tillotson & Co., manufacturers of and dealers in telegraphic

supplies, 41 Third avenue, are the manufacturers of this instrument. They have the plans of it in their possession, from which they can at any time make an instrument to order.

In the form of machine called the magneto-electric the electricity is generated by induction from a permanent magnet. This kind of machine has nearly been discarded, as it requires a person to turn the crank to generate the electricity.

The induced electricity has been used as a remedial agent for less than thirty years. If one-half as many improvements in the construction of induction and galvanic apparatus, be made in the next thirty years, as have been made in the last thirty, our present instruments will soon be replaced by better ones.

The ancient weapons of warfare are superceded by breach-loading rifle and cannon, and the army that would win the battle must adopt the latest and best improvements. So should it be with the great army of physicians and surgeons, that they in their battle with disease and death, may be enabled to select from the archives of medical lore the latest and best means, and then use them with a perception and judgment that will be victorious.

123 Calumet Avenue.

Calabar Beans for Constipation.

Calabar beans have, until lately, been but little used except for contracting the pupil of the eye, and by Dr. Ogle, in cholera. Dr. Victor Subbotin, in the *Deutsch. Archiv. Klin. Med.*, proposes them as a remedy for atony of the bowel, observing that it has been found by Bauer, and confirmed by Besold and others, that this drug produces a cramp-like condition in organs that are supplied with involuntary muscular fibres.

He uses the following formula:

R. Ext. Sem. Physostig. Ven., - - - grs. iv.
Glycerin. Pur., - - - - - - drs. ij.
Solve. Sig. four drops four times daily.

He first administered this solution to a female who was much constipated from atony of the bowel. After the patient had used it twice, a swelling of the abdomen, caused by fæcal matter, disappeared permanently. Aloes and rhubarb had previously given temporary relief. The doctor has since treated successfully another case of the same nature, and one of chronic bronchial catarrh.—*Med. Record.*

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & CO., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

The Principles and Practice of Surgery. By FRANK HASTINGS HAMILTON, A.M., M.D., LL.D., Professor of the Practice of Surgery, etc., in Bellevue Hospital Medical College; Visiting Surgeon to Bellevue Hospital, etc., etc. Illustrated with 467 engravings on wood. New York: William Wood & Co., 27 Great Jones Street. 1872. Pp. 943.

We anticipated that Prof. Hamilton's work on Surgery would be of such a character as to constitute, with his works on Fractures and Military Surgery, a complete system of Surgery. Instead of this, we have a work which was intended by the author "to supply, within the compass of a single volume of moderate size, the instruction necessary to a full understanding of all the subjects belonging properly and exclusively to Surgery: the volume being intended as a text-book for students, and, at the same time, as a direct and complete guide to the surgeon."

The work which Prof. Hamilton thus marked out for himself is one exceedingly difficult of accomplishment. To attempt at the present time, to put in a "single volume of moderate size" *all* which is "necessary to a full understanding" of Surgery, would require an ability to condense which is rarely vouchsafed to man. We are fully impressed with the idea that expurgation is extensively required and can be profitably employed in surgical literature, but hardly, we opine, to an extent sufficient to enable an author to include *all* which is "necessary to a full understanding of all the subjects belonging properly and exclusively to Surgery." A careful examination of the book before us, while exciting our admiration for the degree of success which the author has achieved, awakens a regret that his ambition lay in the *condensing* direction. We regret that the book was not intended as a companion to Prof. Hamilton's former works, instead of covering very imperfectly the ground occupied by them. As a text-book for students the book is valu-

able; as a guide to the practicing surgeon it is "direct" and safe (as Prof. H. usually is), but it is hardly "*complete*" in either character. It is highly creditable to the author and to American authorship; but it has not realized its conception, and its failure to do so is in consequence of the conception being impracticable. We repeat: the work is valuable; but not as valuable as it would have been had the author's aim been higher.

A Manual of Histology. By Prof. S. STRICKER, of Vienna, Austria, in co-operation with Th. Meynert, F. Von Recklinghausen, Max Schulze, W. Waldeyer, and others. Translated by Henry Power, of London; James J. Putnam and J. Orne Green, of Boston; Henry C. Eno, Thomas E. Satterthwaite, Edward C. Seguin, Lucius D. Bulkley, Edward L. Keyes, and Francis E. Delafield, of New York. American Translation edited by Albert H. Buck, Assistant Aural Surgeon to the New York Eye and Ear Infirmary. With 431 illustrations. New York: William Wood & Co., 27 Great Jones Street. 1872.

A Hand-Book of Post-Mortem Examinations, and of Morbid Anatomy. By FRANCIS DELAFIELD, M.D., Curator to Belleville Hospital, Pathologist to the Roosefelt Hospital, etc., etc. New York: William Wood & Co., 27 Great Jones Street. 1872.

History of Medicine, from the Earliest Ages to the Commencement of the Nineteenth Century. By ROBLEY DUNGLISON, M.D., LL.D., late Prof. of the Institutes of Medicine and Medical Jurisprudence in Jefferson Medical College, etc., etc. Arranged and edited by Richard J. Dunglison, M.D. Philadelphia: Lindsay & Blakiston. 1872.

Practical Lessons in the Nature and Treatment of the Affections produced by the Contagious Diseases; with an account of the Primary Syphilitic Poison, and of its Communicability, based on extensive, direct, and comparative observation of the diseases in both sexes. With an Appendix, on the recent Report of the Royal Commission on the Contagious Diseases Act, and its application to the Voluntary Hospital System. By JOHN MORGAN, A.M., M.D., University of Dublin; Fellow of the Royal College of Surgeons, Ireland; Surgeon to Mercers Hospital and to the Westmoreland Lock Hospital, Dublin, etc., etc. With plain and colored illustrations. Philadelphia: J. B. Lippincott & Co. London: Bailliere, Tindall & Cox. 1872.

Lectures, Clinical and Didactic, on the Diseases of Women. By R. LUDLAM, M.D., Prof. of Obstetrics, and the Diseases of Women and Children, in the Hahnemann Medical College of Chicago; late President of the American Institute of Homœopathy, etc., etc. Second edition. Chicago: C. S. Halsey. Philadelphia: F. E. Boericke. London: Homœopathic Pub. Co. 1872.

Ovarian Tumors: their Pathology, Diagnosis, and Treatment, especially by Ovariotomy. By E. RANDOLPH PEASLEE, M.D., LL.D., Prof. of Gynæcology in the Medical Department of Dartmouth College; Attending Surgeon of the New York State Woman's Hospital, etc., etc. With fifty-six illustrations on wood. New York: D. Appleton & Co., 549 and 551 Broadway. 1872.

General and Differential Diagnosis of Ovarian Tumors, with Special Reference to the Operation of Ovariotomy; and Occasional Pathological and Therapeutical Considerations. By WASHINGTON L. ATLEE, M.D. With thirty-nine illustrations. Philadelphia: J. B. Lippincott & Co. 1872.

The Science and Practice of Medicine. By W. AITKEN, M.D. Third American, from the Sixth London edition. With additions descriptive of certain Forms and Types of Disease peculiar to this Country, and their Modes of Treatment. Edited by Meredith Clymer, M.D. 2 vols. Illustrated. Royal 8vo. $12; leather, $14. Philadelphia: Lindsay & Blakiston. 1872.

Epidemic Cerebro-Spinal Meningitis. With an Appendix, on some points on the Causes of the Disease, as shown by the History of the Present Epidemic in the City of New York. By MEREDITH CLYMER, M.D., University of Pennsylvania; Fellow of the College of Physicians of Philadelphia; formerly Physician to the Philadelphia Hospital, etc., etc. Philadelphia: Lindsay & Blakiston. 1872.

PAMPHLETS.

Facts of Vital Statistics in the United States; with Tables and Diagrams. Extracts from an Address by J. M. TONER, M.D. Published in the Circular of Information of the United States Bureau of Education for March, 1872.

Transactions of the Medical Society of the State of Pennsylvania, at its Twenty-Third Annual Session, held at Franklin, Pennsylvania, June, 1872. Volume IX, Part I. Published by the Society. Philadelphia: Collins, Printer, 705 Jayne Street. 1872.

Editorial.

In compliance with the expressed desire of the Faculty and students of Rush Medical College, we take the liberty of disregarding the wishes and doing violence to the modesty of our worthy senior, in publishing in full, without his approval, his introductory address, inaugurating the Course of Lectures of 1872–3.

Although the address was written most hurriedly, in the midst of unusually pressing professional engagements, it nevertheless commends itself to our judgment, as peculiarly appropriate to the occasion and circumstances under which it was delivered.

We believe that the Alumni of the College hail with joy the knowledge that their alma mater still lives, and feel sure that the medical profession at large will take pride in the energy and perseverance which have been manifested by its Faculty. The disasters which overwhelmed the College, and its triumph over them, are a part of the history of the medical profession, and in that connection every incident connected therewith deserves to be recorded.

H.

ADDRESS BY PROF. ALLEN.

Opinionum commenta delet dies—or, by sufficiently free translation, We change our notions as we get older.

A man born blind, whose cataracts at adult age Brother Holmes removes, sees all things on a plane, like a Japanese picture, without perspective. It takes education to make him see curves and corners. A baby, taking its first lessons in walking, tries to move both legs at once, and from its contused head gains an inkling of the first law of progress—do one thing at a time, "Left foot first, mark time, forward march!" The children of a larger growth have to obey the same law. Except one first become as a little child he can in nowise enter the kingdom of knowledge.

Some old philosopher said: "The profoundest object of philosophy is to restore mankind to common sense." The superficial object is to weave all knowledge into a plausible system of opinion, a coherent web of doctrine—much too often, in fact usually, of spidery strength, Joseph-coated colors, and Penelope-woven

duration. Some book-writing doctors occur to my mind in this connection, many dead and some living; but, as suitable in a well-constructed sermon, the application is to be left to the latter part of the discourse.

The object of education and study, largely, is to correct the wrong impressions which our senses convey. Some people think that everything of mind comes from the senses. Books have been written to defend this notion—just as other books are written to prove, or at least convince, that man, "noble in reason, infinite in faculties," has developed through oysters, frogs and monkeys, from the original monad or tremulous protoplasm. Something more than good eyes is necessary to see, and what we hear is by no manner of means always truth. The world seems to stand still, and the sun and stars, fixed in a blue or black hollow sphere, to rise and set. The earth looks flat wherever one travels. The baby reaches after the moon, and many adult people believe they can "pluck out the heart of the mystery" of their own existence, the whence and wherefore of the universe, by similar exercise of the "appetencies." Savans in abundance will tell you exactly how many thousand years it has taken for Niagara Falls to wear its way back from the Ontario to the present precipice. They will figure out mathematically how long it took the coal strata to be deposited, and the coral reefs to be built.

Some doctors will tell you exactly how life sprang into being from deft, yet fortuitous, combination of atoms, and how all the varied phenomena of disease and remedy may be caught and imprisoned in the confines of a rhetorical sentence. They have done it for ages, and they are doing it now.

Did it ever occur to you that the confusion of tongues which fell upon the race at Babel, like many another so-called punishment, has proved, to our profession particularly, a wonderful blessing? Heaven in its goodness conceals from us in the unknown tongues many a vagary, wild dream or foolish imagining that otherwise we should have added to the already enormous catalogue of follies of opinion in our own vernacular. "Great is silence," and great is the *unknown* tongue!

In the macrocosm of history, opinions, doctrines, dogmas and notions appear and disappear like the shades and colors of the kaleidoscope as it passes from hand to hand, or even a muscle

vibrates. In the microcosm of the individual life the dance of the atoms proves equally perplexing, and the mental phantasmagoria almost to the same degree illusive. I say almost, for, as Gibbon writes, "The experience of past faults which may sometimes correct the mature age of an individual, is seldom profitable to successive generations of mankind." Experience is the report of the senses, corrected by the judgment, or highest power of the intellect. And this is exactly where many people mistake. "To most people," as Coleridge writes, "experience is like the stern lights of a ship, which illumine only the track it has passed." There is an old fable of the time when the animals were gifted with language (before their Babel was). "An asse and a mule went laden over a brook; the one with salt, the other with wool; the mule's pack was wet by chance, the salt melted, his burden the lighter, and he thereby much eased; he told the asse, who, thinking to speed as well, wet his pack likewise at the next water, but it was much the heavier; he quite tired."

A weighty experience for the poor ass, but practically exemplified every day among bipeds who yet talk.

So far as history gives us any clue, men have been very much the same through all the ages. Surroundings have varied immensely; exterior influences have been continuously changing, but the human mind has ever manifested the same workings. There is probably not a person here present but who, within his own memory and observation, has seen the most remarkable changes in public opinion and belief—political, moral, scientific, and social. Reading the history of the world intelligently teaches us not to be astonished at this. "The individual is an enigma, the mass a mathematical problem." As we recede from objects too vast or too multitudinous for us to comprehend, they concentrate to dimensions and shapes within the limit of our faculties. As we approach what seems both single and simple, we find it resolving into numerous and complex parts. In our study of medicine, or indeed any branch of science, it becomes necessary to use both telescopic and microscopic vision—literally and by striking metaphor.

A few moments since, I said the savans, some of them, will tell how long things have been making or shaping. They will figure out to you, with astounding nearness, about how long it has taken

to develop a crystal or a polyp to a Shakespeare or an Agassiz. On the basis of what they call experience, personal or historic, they will give you the "testimony of the rocks," and from the fossils of the lowest strata will evoke confirming voices.

How trivial and small all this is to the real thinker, who can look above and beyond the "muck-rake." As the senses are the servitors of the intellect, so experimenters and observers are the hewers of wood and drawers of water to the real philosopher.

Every school-boy has been taught that the earth revolves upon its axis—hence darkness and daylight; that the moon revolves around the earth—hence poets' rhapsodies and lovers' walks by moonlight, and garroters and policemen at other hours; that the earth revolves about the sun—hence spring, summer, autumn, and winter. But a still larger and more magnificent view, which centuries of history give us only in minutest, yet most readable, characters, exhibits to us the colossal fact that our sun and its attendant train of planets do not swing forever in the same space relatively to the so-called fixed stars. Our solar system is steadily moving in one particular direction, from which it results by optical law that the stars which it is receding from appear to be approaching each other, and those which it is approaching are gradually separating more and more. From the analogy of the motion of all the sidereal bodies, this motion is most likely in an ellipse of revolution. As the earth with its satellite moon revolves around the sun, so does our solar system revolve in company around some inconceivably far-away luminary or central sphere. And that grand orbit gives a spring, a summer, autumn, and winter, each of myriad thousands of years. In that spring the amazing flora and fauna of the geological strata were warmed into being; they matured in that summer of summers; they declined in that wonderful autumn of thousands of years; and the inevitable winter of the ages buried them in the solid rocks or ice which covered the globe —in our time to be dug up and maundered over, and development theories fashioned from them. "O lame and impotent conclusion!"

Experience, to be of advantage, even to the individual, necessitates the possession of sound judgment and wide acquaintance with facts; in other words, general knowledge. No man can thoroughly understand the branch of science to which he especially devotes his attention, unless he ascends first to the level of all

sciences. In medicine, for instance, we exclaim against the so-termed specialties, unless the specialist has first gone over the entire curriculum of medical study. He must have risen to a level where he could see the relations of things, as well as the things themselves. In pictures of battles the commanding general is usually represented in front of his troops on a showy Bucephalus, rich in epaulettes and buttons, waving a huge sword over his head, looking like an incarnate Mars. The fact is, I am told, the general is behind all the ranks, up a hill, or a tree, or a house-top, very properly careful of his personal carcass, and yet seeing to the relations of things. But before getting to be a general, a man should know the manual of arms, and all duties of privates and subordinate officers. The medical student who wishes to be able to command experience to his service, and to acquire a sound philosophy or system whereby he may be guided in the subsequent duties of his professional life, must first thoroughly master his manual of arms, tactics, fortifications, *et id omne genus*. Time enough after that for his highest efforts in "grand strategy." Patrick Henry said: "The only lamp by which my feet are guided is the lamp of experience" —quite enough light, perhaps, for a politician or stump speaker; but if you expect this to answer your purpose hereafter, I am afraid your lamp will turn out a mere French candle—*bougie*, I think they call it—very tallowy, serving mainly to make darkness visible.

We change our notions as we get older; at least we ought to do so. There are some people—doctors even—who pride themselves upon what they call their consistency, that is, their obstinate adhesion to opinions and notions instilled into their minds in the far-away days of their pupilage. The sins of the fathers are visited upon the children, even unto the third and fourth generation. Thus the old-time experience is hung upon the shoulders of the young student, like Christian's pack in "Bunyan's Pilgrim's Progress."

Now this is all wrong. It is the inorganic world in which absence of change is admirable. But where life is, there is incessant change. Nay, without this change there is no manifestation of life. The wasting away of the old and the assumption of new forms is the essential fact of life. The old mythology represented the genius of Life as inverting his torch and becoming the Angel of

Death, but the philosophic physiologist will tell you that the truer allegory is that of the grand old Norse conception of the life-tree Igdrasil, which sends down its roots deep into the death regions. The *dead* dragon's teeth sowed sprung up in crops of armed men. "Truth advances only over ruins"—the ruins of previous beliefs. We, old men, are exceedingly apt to lament the degeneracy of these latter days, and in so doing prove the coming on of our days of dotage. The soil of mind is only then rendered truly fertile when the rank weeds of prejudice, false doctrine, crude judgment and foolish fancies are alike uprooted and plowed under. And it is best to do this as early as possible, else these tares will "go to seed," and by and by, when you undertake to become free from them, they will become more abundant by some twenty, some sixty, and some a hundred fold. Time comes when Ephraim is joined to his idols, and is to be let alone. Consistency is a jewel neither for a swine nor a mule's snout. In a presentable form it suggests that he who wears it has a sound and coherent philosophy of life and action, of principles and practice—not sequence in time only. The consistent mind is one wherein there is congruity among its several parts, and agreement with itself. The opinions it forms and the actions it incites stand together in an orderly manner, according to Heaven's first law. The consistent teacher, speaker or writer will not contradict in one part of his discourse the doctrine of another part. The consistent practitioner will not in one case adopt different principles of management from those which guided him in another. Adopting a principle which he thoroughly believes to be sound, no dictum of antiquity or usage of the present, will swerve him from carrying it into both teaching and every-day practice.

Like a sculptor, in whose mind glows the beautiful ideal, he is constantly separating from the marble blocks those obstructing masses or particles that preclude him from full view of the inimitable statue within. He has no regrets at the parting with these.

And thus the consistent, enthusiastic medical scholar zealously labors at the work before him, until at last, like Prometheus of olden myth, he calls down the *divinam particulam auris* to vivify his creation—and then, usually, gets from men the reward Prometheus got for his pains—a consignment of his liver to the vulture, so far as they care. On the whole, the best of us get so little ahead of

the poorest that it is not well to "gush" extravagantly over the matter.

My young friends, although I would not be so presuming or indecorous as to charge any one of you with the cultivation of a crop of "wild oats," nevertheless I will venture to remark (confidentially) that the very clearest head among you needs, nay, absolutely demands, that minute knowledge and, at the same time, that comprehensiveness of thought which will enable it to weed out the prejudices, fancies and notions which will gain admission to the very best of brains. In the book of Job we read that when the sons of God were gathered together, Satan came also, and just so it happens that no man living is exempt from some one meddlesome demon. Happy if the name be not "Legion." He who recognizes his attendant Sathanas is not happy, but tolerably safe. He who confidently believes he is not possessed of such a devil may be triumphant and self-satisfied, but Mephistopheles grins over his shoulder, and some day he will disappear in a fire-wagon quite other than that the prophet saw in the vision.

Some of you have a fair stock of elemental medical knowledge already on hand. Do not be afraid of adding to it. When Xerxes looked over his great army, they say he wept because in a hundred years he and they would all be dead, and so I have myself, on occasions like the present, shed metaphorical tears at thought that, in ten years even, many of the class would not know nearly so much as now.

In the old countries the incipient Esculapius enters, like an incipient carpenter, upon a regular apprenticeship, the first years of which are notably devoted to the acquisition of a smattering of academical studies, reading, writing, arithmetic, history, "a little Latin and less Greek;" sweeping out the office, running of errands; by and bye advanced to the position of a seat in his master's gig, he passes on to the hospital and lecture-room, and ultimately is raised to a full-fledged doctorate. In this country no such menial position is assigned the student. He usually has already acquired a reasonable general education, before he makes choice of a profession. Then at mature age, or verging upon manhood, he enters the office of some physician of repute in his immediate neighborhood. (And here, permit me to interpolate, let no man sneer at the country physician of good local repute. It is ten-fold easier

for a man to conceal his real ignorance, acquire extensive practice, and even reputation, in a large city, than in a goodly-sized country town, where everybody knows everybody and weighs everybody.)

The American medical student, once started in the pursuit of his profession, will overtake and possess it. Self-reliant and determined, he becomes zealous and enthusiastic, as all native Americans are born, and adopted citizens become, in whatever they undertake. He will achieve success because he knows its essentials are under the command of his own will. In his vocabulary there is no such word as fail. He rejoices as a strong man to run a race. The maxim is, "What man has done man may do." If my predecessors have attended six lectures, an hour each, per day, I can do it. Away with the puny, pitiful whining about too much to do. It is unworthy the age—unworthy, especially, the American medical student. One thing at a time, but to that one thing is fastened everything of energy, everything of faculty. No cork-floats or bladders for the one who wills to swim. You are here face to face with facts; you have no windmills of dogma to attack, nor are you called upon to incise the wine-skins of old-time theory.

Explanations are temporary, fleeting and changeable, but facts are ever silver, gold and diamonds, whatever their temporary impress or setting. Get them now, and in all the abundance possible; quarrel about them hereafter. You have not time for dissensions or debate now. You will get wiser as you grow older, or, at least, change your notions. Sufficient unto the day is the evil thereof. Let the "eclectic" rage, and the homœopathist imagine a vain thing; you are employed in your own great work, and like him who rebuilt the temple, you cannot come down.

Of the making of books there is no end, especially of medical books without beginning or end. Do not be frightened. You are not obliged to read them. In those countless bushels of chaff there are many grains of wheat. We, your temporary preceptors, have been long engaged in looking over the heap and selecting kernels for your particular nourishment and comfort. (O, what cackling have we heard over a single grain in times not long past!) The winds of time, to our encouragement and satisfaction be it said, are constantly wasting the heap; there are hosts of errors and follies that will blow away, without assistance from our respiratory muscles.

You need not trouble yourselves about divisions among medical men, different schools of teaching or practice. They that cast out the devils of ignorance and folly are with us and for us. Time will dissipate the largest cloud of wrong doctrine, and, given plenty of rope, the speculators and theorists will hang themselves.

Somebody remarked: "The world moves!" We cordially assent to the statement. Rush Medical College moves also. A year ago, some of you will recollect, it was located on what is everywhere known as the "North Side."

The geologists tell us that what are now the polar latitudes were once habitable and inhabited, but owing to causes over which the natives had no control, the climate became so inclement that ultimately it ceased to be desirable, physiologically, for business or residence purposes. *Mutatis mutandis* — this was the fact about a year ago on the North Side. Hence Rush Medical College migrated, and has gone into camp or winter quarters, where we are now present. Some one has said Rush Medical College was burned down last year, during the general house-warming in which our city indulged. There can be no greater mistake. I have high authority for the remark that "something more than bricks and mortar is necessary to make a medical college." For many years Rush College has been demonstrating the truth of the proposition. Our splendid and commodious building went up in flame and down in ashes, but the College only moved to the South Side, preparatory to even yet another migration. "Out of the nettle danger it has plucked the flower safety." Scarcely was the college building completed before we began to recognize the inconvenience of being at such a distance from the great hospital of the city. We hoped, it is true, for the establishment of a respectable hospital on the North Side, but circumstances seem to have combined to postpone for too long a time this desirable event.

The fire came and solved the problem. As the mountain would not come to Mahomet, Mahomet went to the mountain. Rush Medical College moved.

Without the preliminary and accompanying collegiate instruction and discipline hospital experience is little worth. Without hospital illustration, the college plays Hamlet with the part of Hamlet omitted with malice aforethought. The college and the hospital

should be side by side, and the clinical teacher and didactic instructor move hand in hand. What to observe and how to observe, and then what is the meaning of the indications? These are the great questions, and the student who faithfully seeks their solution will succeed. Power gained to solve these will bestow power to solve others, however recondite, with regard to right methods of cure.

One thing at a time. Do not be in a hurry to get at what you fancy the practical portion, before you have mastered the often-wearisome elementary parts of the matter. Before you make chicken soup, catch and kill your chickens.

The other day, when I was notified that the annual greeting to the new class was to be pronounced by myself, it must be confessed, I was more than half disposed to shrink from what has always heretofore been a pleasure. The surroundings are strange. For many years the old associations have clustered about the corner of Indiana and Dearborn streets. It seems something like going from the old home, abandoning the family roof tree. I half feared I should feel as though we had all left Rush and gone to some new-fangled reform school.

Then, again, it was reasonable to expect that the speaker of the evening should be immense and flamboyant over the great blaze; that his sentences should corruscate and glow like the lambent flames which swept away more of the works of men than, in the world's history. ever disappeared in any single holocaust.

But when it was remembered that so many of those who have stood before successive classes of Rush Medical College for many years, were still responsive to the roll-call for their usual duty, there could arise no other emotion than a stronger determination than ever that the pillars of this temple shall never be shaken, or the fires upon its altars ever go out. And then it occurred, What is the use talking about the fire? Can we "gild refined gold, paint the lily, or add colors to the violet?" Of course we may—but lose the labor. But the tongue wags not now, nor is the pen yet shaped from steel, gold, or goosequill, which may describe the Chicago fire. None but itself can be its parallel.

One old notion, fortunately, was burned up at the same time with old Chicago—that long years were necessary in which to build a

great city. In these times if a thing needs to be done it is done, and done quickly.

In this study of ours, medicine, a similar idea stands pre-eminent. You can build your professional temple *cito, tuto et jucunde* if you imitate in zeal and industry the builders of new Chicago. With these in abundance on your part, and competent instructors, such as I am proud and happy to rank my colleagues, you can attain in the prescribed curriculum necessary to be passed over before examination for your diplomas, not only the degree, but positive knowledge and experience sufficient to start you in professional life, at once, as safe and successful practitioners.

Without these, no matter how elongated your term of pupilage, how complex the plan of education, and how plausible the teacher, the finally won diploma is but a frail raft in a stormy sea. Rush Medical College points proudly to its alumni, wheresoever dispersed, in absolute proof of these propositions. By their success in every department of the profession it is willing, in the future as in the past, to be tried and tested.

We meet you to-night not in a temple of science, stately with towers, groined arches and clustering columns. You look about you and see none of these. The ancient Spartan, when the astonished visitor asked for the fortifications of the city, pointed to the *men* and said: "These are the walls of Sparta." We welcome you to a similar enclosure, and pledge the highest efforts of the Faculty for your rapid and sure advancement.

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Prof. Freer,

Having rebuilt his residence on the North Side, will hereafter be found there. Correspondents and friends will govern themselves accordingly. His No. is 224 Ontario Street, between Clark and Dearborn.

Loot.

Mortality Statistics of the Three Learned Professions.

Dr. J. M. Toner, Washington, D. C. (*Boston Med. and Surg. Journal*), has compiled the following statements of the number of deaths returned from the Census of 1870, as occurring among the three learned professions of our country—theology, medicine and law—for the year ending June 30, 1870. He has been unable to obtain the number returned as engaged in each of these professions for the year 1870. For the year 1850 there were returned 28,842 clergymen, 40,564 physicians, and 23,939 lawyers. For the year 1860 there were returned 37,529 clergymen, 54,543 physicians, and 33,193 lawyers. It is fair to presume that each retains about

the same proportion to each other in the census of 1870. The number of deaths reported among clergymen in all the States and Territories of the United States for 1870 was 629; among physicians, 947; and among lawyers, 595.

Causes of death assigned.	C.	P.	L.
Unknown,	10	15	1
General Diseases,	242	344	234
Diseases of the Nervous System,	77	143	234
" " Circulatory System,	54	73	54
" " Respiratory System,	84	130	58
" " Digestive System,	76	105	61
" " Urinary and Generative Organs,	32	37	19
" " Organs of Locomotion,	3	4	0
" " Integumentary System,	1	1	3
Condition not necessarily associated with general or local diseases,	39	31	19
Poison,	2	18	13
Accidents and Injuries,	9	46	43

—*Med. Record.*

The Slaughter of the Innocents.

Attention is frequently called to the mortality among children in particular seasons or particular localities, but few seem to be aware of the frightfully large per centage of infant mortality year by year, compared with the whole number of deaths of all ages. The mortality tables prepared by Dr. J. M. Toner, of this city, whose careful and intelligent labors in gathering the vital statistics of the country, have been referred to heretofore, present some startling facts in this connection. These tables show the annual mortality in several of the States, and in a number of our large cities, made up from their published reports for the years named, giving the whole number of deaths, and also the number dying under five years of age; the number dying between five and ten years; also, the number dying from cholera infantum, with the per cent. of each class.

The census of the United States for 1850 showed a per centage of 39.76 of deaths of children under 5 years of age to the total deaths of all ages; and the per centage in the census of 1860 had increased to 43.15. The mortality under 5 in the great cities of the country has risen to a much higher rate, the highest being in Chicago, where it has mounted from a per centage of 28.67 in 1843 to 62.83 in 1869. In 1868, the number of deaths of children under 5 to the total deaths of all ages stood in that city in the frightful proportion of 3,713 of the former, to 5,984 of the latter, and in 1869 it had risen to 4,077 under 5 to 6,488 over that age.

Next comes St. Louis, where, in 1871, the per centage was 51.10; the number of deaths under 5 being 3,409 to 6,670 above.

Ranging about the same as St. Louis is the per centage of infant

mortality in New York. In New York city in 1869 the per centage was 51.09; the number of deaths under 5 in that year being 12,359 to 25,167 above. In that city it would appear, however, that the proportion of deaths under 5 is rather diminishing than otherwise, as during the series of years from 1835 to 1853 it had ranged from 51.02 to 57.10, while in 1866 it was but 47.73, in 1867 it was 52.10, and in 1869 but 51.09. In the year 1811 the mortality in New York amongst the children seems to have been exceptionally large, as the per centage was 77.09; the number of deaths under 5 being 1,946 to 2,524 above that age. In Philadelphia, too, the chances of the little folks in the fight for life seems to be rather improving, as the per centage of deaths under 5 stood as high as 51.87 in 1853, and 51.25 in 1861, while from 1862 to 1869 it has ranged from 43.22 to 46.63, and in 1870 was but 44.27.

Next to New York in infant mortality comes Baltimore with its per centage, in 1869, of 49.85 under 5 years, though the proportion has increased but little since 1860, when it stood 48.74.

Cincinnati, in 1868, had a per centage of 46.68 under 5; and Philadelphia, as above stated, the next highest per centage. In New Orleans the returns are brought down only to 1857, when the per centage was 43.85. Providence, R. I., seems to be a favorable place for the little ones, as the mortality under 5 has not, from 1865 to 1870, been above 36.99.

In this city the mortality returns have been so inadequately made that only scattered statistics covering separate years can be obtained. In 1849 the number of deaths under 5 was 400, to 866 above; a per centage of 46.18. In 1852 there were 547 deaths under 5, to 1,115 above; a per centage of 49.05. In 1858 the per centage was 45.78, the number of deaths under 5 being 429 to 937 above.

The mortality statistics of Richmond present some curious features, as showing that while the number of deaths of colored children under 5 is nearly two to one that of the whites of the same age, the proportion of white children dying of cholera infantum is nearly double the colored mortality from the same disease, there being 490 white deaths in 1869 of cholera infantum to 250 colored in the same year in that city.

In view of the appalling proportion of infant mortality, especially in our large cities, shown by the statistics above referred to, Dr. Toner some time ago called attention to the necessity for adopting some general measures for checking this vast waste of infant life. We have various humane institutions, insane asylums, etc., to alleviate the sufferings and lengthen out the lives of the wrecks of humanity, but we have literally nothing to stay the immense waste of life of the hopeful young, full of great promise. It is certainly better to provide for the preservation of the lives of those who will grow into usefulness, than to confine all our humane efforts to guarding the health of the hopelessly shattered wrecks.

Of course wealthy parents have it in their power to remove their ailing children to purer air, but it is an unpleasant task for a physician to say to parents, unable to meet the expense, that the life of a child suffering from cholera infantum depends on its being removed to another locality. To meet this difficulty, Dr. Toner suggests the establishment of free parks at elevated points, where parents, or mothers and nurses, may camp out in the summer months in such style as suits their means or convenience, either in tents or cheap cottages. Cities and communities should feel it a moral duty to aid in any measure of the kind for the preservation of infantile life. Cheap fare, or free fare, should be furnished to poor women with their sick babes, and they should be aided with rations on the ground. Philanthropic people no doubt would willingly aid, if the means were pointed out, in some systematic measure of relief for the suffering little ones who perish by the thousands yearly in our large cities, for want of air and attention. The child in such cases is not sick, but is suffering simply from excess of heat. There is no solid tissue in the infant. It is virtually all liquid; it gets heated up and deterioration takes place. What is wanted is to keep down the temperature. Infants do not perspire as adults do; but the process of retained heat goes on with them, and they suffer accordingly. Evaporation should be encouraged; they should be sponged frequently and exposed to the air as much as possible; and, above all, there should be no flannels next to the skin in hot weather. Many mothers really destroy all chances their ailing babes have for life by bandaging them with flannels, and sedulously keeping them out of the fresh air lest they should take cold in a draught. Infants, for the reasons above explained, can hardly have too much air.—*Washington Paper.*

Treatment of Small-Pox by Baths.

At a recent meeting of the Dublin College of Physicans, Dr. H. Benson called attention to a form of treatment so prominently brought before the Society on a late occasion by Dr. Stokes. He referred to the treatment by the bath. He was so struck by the result in Dr. Stokes' cases that he determined to adopt the treatment in the next suitable case he met. In a very few days such a case presented itself. The patient was a gentleman residing in one of the suburbs of Dublin. He suffered from an extremely bad form of confluent small-pox. It was remarkably confluent, not only on the face, but also on every part of the body. The pustules were not well filled but were flat, and the face presented the appearance as if a wax candle had been dropped over every part of it. During the secondary form the delirium became exceedingly troublesome, and the patient quite uncontrollable. For the previous twenty-four

hours he had not been in bed for five minutes, and he had had no sleep for over thirty-six hours. Hypnotic remedies had no effect, and it was not possible to apply leeches or other applications to the head. With some difficulty he was placed in a slipper-bath, of the temperature of 98°, and he immediately exclaimed, "it's glorious, it's delicious, it's delightful." He became at once calm, collected, and obedient, and within fifteen minutes he ceased to have any delirium. After half an hour he slept in the bath for two hours, occasionally waking for a minute or two while fresh water was being added. He (Dr. Hawtrey Benson) kept the patient in the bath for five hours and a half, removing him after that on account of headache which supervened. He was then put to bed, perfectly free from delirium, and with the help of fifteen grains of chloral (of which four times that dose had no effect previously) he slept uninterruptedly for eight hours. The case progressed from that out without the slightest check. Dr. Benson thought that this treatment did not receive its due measure of attention at the hands of the profession.

Dr. Grimshaw asked, what was the temperature of the man's body when he went into the bath?

Dr. Benson replied, that the temperature could not have been lower than 104°, and that the bath was at least six degrees lower.

Citrate of Iron and Bismuth a New Remedy for Dyspepsia.

By CHARLES RICE.

Although I call this preparation new, it has been in use for several years in the public hospitals and dispensaries of this city, and also in private practice, and has acquired the reputation of being one of the most prompt and valuable remedies at present known for gastric disturbances, depending upon an abnormal or defective digestion generally, and particularly so for the gastric intolerance of consumptive patients. Its action is often so prompt that one full dose has in many instances afforded immediate relief.

Being requested some years ago to devise a liquid preparation containing Bismuth and Iron (at that time intended for use in some other complaints), I finally, after various trials, adopted the following formula, which I have followed ever since:

Take of Citrate of Bismuth, Ammonio-Citrate of Iron, each 320 grs.; Water of Ammonia, Water, each a sufficient quantity.

With four ounces of Water rub the Citrate of Bismuth into a smooth paste; gradually add Water of Ammonia until solution takes place, being very careful not to have an excess of Ammonia. Now add the Ammonio-Citrate of Iron and some more water; dissolve, filter, and wash the filter with enough water to make the solution measure one pint.

This solution, if intended to be long kept, may be partly made

up with Glycerin, although I cannot speak from experience whether it is so well borne by the stomach. A more useful addition, however, is good sherry wine, of which there may be used ten fluid ounces, (or perhaps more), in place of so much water.

The above solution is prescribed under the name of Liquor Ferri et Bismuthi Citratis, and contains in one fluid-drachm two and a half grains each of Citrate of Bismuth and Ammonio-Citrate of Iron. The dose is from one to two fluid-drachms, half an hour before meals, or—when required—after meals.

It is, of course, no true double salt, chemically speaking, but only a mixture of Ammonio-Citrate of Bismuth and Ammonio-Citrate of Iron; and, although a true double salt containing those elements might perhaps be prepared, I doubt whether it could have any better effects.

The solution may also be prepared of a concentrated state, and spread upon plates of glass to dry, yielding exceedingly handsome scales of a golden-brown color, which must be protected from the light, and five grains of which are equal to one fluid-drachm of the solution.—*American Journal of Pharmacy.*

Phosphorus in Skin Diseases.

This has been highly lauded by Dr. Fox and others. In an article in the *Dublin Journal of Medical Science*, Dr. Eames says in reference to its continued use:

I have found that phosphorus produces a coated state of the tongue, not unlike the silvery tongue which follows the prolonged use of arsenic. Loss of appetite, mental depression, and bodily weakness, also are induced much earlier in some cases than in others, but to be watched for in all cases in which the drug is given. On the earliest appearance of dyspeptic symptoms I now discontinue its use, and administer some of the mineral acids. Many patients have mentioned that some two or three minutes after taking the medicine a pleasant sensation of warmth is felt through the entire body. I have not ascertained that any aphrodisiac effect is produced, though I have frequently inquired after it. A slight diaphoresis is observed occasionally. Diarrhœa was not induced in any of my cases. The amount of urine in some was slightly increased. An analysis made by my friend Dr. Cameron failed to detect any deviation from the standard of health.

Most of the foregoing cases had been treated by arsenic and other drugs before coming under my care. I have at hand notes of numerous other cases, which have been from the first treated successfully with phosphorated oil; these I have not detailed, as the intention of the present paper is to prove that the administration of phosphorus will cure certain cases of cutaneous disease, even after

mercury, arsenic, and other remedies, vaunted as specifics, have completely failed to do so. I may mention, however, that eczema of the scalp, with enlargement of the glands of the neck, is very amenable to treatment by phosphorous. The strumous character of this disorder, and the difficulty of its removal, are very generally admitted. I have seen in many cases a copious eczematous eruption on the head and behind the ears, combined with greatly enlarged *glandulæ concatenatæ*, disappear in a few weeks after this treatment had been adopted, the glands being also quickly restored to their normal size.

On the use of Pepsine Wine in the artificial Feeding of Infants. By W. J. CUMMINS, M.D.

* * * * There is nothing, of course, like a good breast of milk for an infant, if it can be had; and in "the good old times," when the peasantry and small farmers lived on potatoes and milk, without stimulating their nerves with strong tea, nor their brains with penny-a-liner's words, there was an ample field for the selection of a foster-parent; but now even when the *rara avis*, a good nurse, is procured, she is so independent and knows her power so well, that any caprice must be humored, and she is always ready to throw up her situation or neglect her charge. A wet-nurse is, then, an admitted torment, and a balance struck between its advantage and disadvantage is generally against the former.

Artificial feeding by bottle is a great improvement upon the old system of spoon-feeding, as the act of suckling stimulates the salivary glands and insures due in-salivation, which is an important part of infantile digestion. With such an aid the stomach of most *human* infants is vigorous enough to fall into the way of digesting *cow's* milk, properly diluted, and mixed with sugar and cream to assimilate the proportions of its constituents to human milk—but besides the relative excess of casein and albumen contained in cow's milk when compared with human, the coagulum of the latter is "soft, flocculent, and not so thoroughly separated from the other elements of the fluid as the firm, hard curd of cow's milk is from the whey in which it floats." (West.)

When we reflect that the digestive organs of the *human* infant are found to digest human milk, and the force of its gastric juice proportioned to the solution of its soft, flocculent coagulum, we can understand why the solvent power of its gastric juice is sometimes unequal to redigesting the firm curd of cow's milk. When such is the case, acetous fermentation is quickly set up; offensive gases distend the stomach and taint the breath, vomiting and diarrhœa set in, and in process of time the little patient sinks into a miserable state of marasmus, and dies. The remedy for this state of things is simple, for although we cannot change the ele-

mentary composition of the milk we have to use, we can introduce into the infant's stomach a digestive power proportioned to the food it has to use—the organic principle of digestion taken from the stomach of the calf.

It is now many years since I first applied this simple theory to practice in the case of one of my own children, who, when about three or four months old, was reduced to a condition of marasmus by vomiting and diarrhœa due to imperfect digestion of cow's milk. I ordered him fifteen or twenty drops of Pepsine wine, to be given immediately before or after each meal. Soon after commencing it he began to improve, and by degrees all bad symptoms vanished, and nutrition was quite restored.

The Pepsine was continued until he was nearly two years old, and he throve at least as well as if he had been wet-nursed; other treatment, of course, pre-aided and accompanied the use of Pepsine, but it was not until the latter was commenced that improvement took place.

Shortly after, a child born in England, and bottle-fed, was brought over to this country when about six months old; he also was suffering from infantile dyspepsia, and was pining away in a listless, apathetic state, quite indifferent to surrounding objects, and appearing as if he would lapse into idiocy from mal-nutrition of the nervous centers. I immediately ordered him Pepsine wine, which produced such beneficial effects, that after it had been continued about twelve months, he had become a bright, intelligent, well-nourished child.

Since then I have never recommended a wet-nurse, and have used Pepsine wine largely in dispensary, hospital and private practice, and have seen many apparently hopeless cases recover under its use.—*Dublin Journal of Medical Science, Feb.*

Confession no Proof of Guilt.

The *Lyon Medical*, of April 28, 1872, refers to the case of a girl, aged twenty, supposed to be seven months pregnant. After an attack of hemorrhage, her size seemed to have considerably diminished; and the girl, being closely questioned on the subject, said that, becoming aware of the discharge, she repaired to the closet, where she stayed ten minutes. She added that all had escaped, but that she had not time to look, as she was being called by her mistress. A midwife and the parish surgeon both declared that the girl had been recently confined. She was now again assailed with questions, and told that, for her own sake, she had better make a clean breast of it, as no fœtus had been found in the closet. Perhaps, it was suggested, she had thrown it into the pigsty. The poor creature at first denied such a thing, but at last confessed that it was so. A search was made, but no child was discovered.

She was tried for concealment of birth, on her own confession, and sentenced to six months' imprisonment. The girl had not been taken into custody in consideration of her free confession, and she quietly proceeded to the jail. When admitted, it was found that she was far advanced in pregnancy, and soon gave birth to a healthy girl. By the French law she could no longer appeal, as more than ten days had elapsed since the verdict; but the judge, having the power of appealing within two months, did so, and the girl was acquitted.

This case shows that confession, which is looked upon as the clearest proof of guilt, cannot always be relied upon. And what shall we say of the surgeon and the midwife? The examination was probably hurried and incomplete, and the conclusion arrived at on seeing the signs of recent abundant hemorrhage. This case, even in a simple obstetrical point of view, is full of valuable hints. —*Lancet, May* 18, 1872.

Removing a Foreign Body from the Nose.

Accidentally opening an old number of "Ranking's Abstract," I read an article headed, "A Novel Mode of Removing a Foreign Body from the Nose," in which is related the case of a child from whose nose surgeons failed to remove a cherry-stone, and were outdone by the village barber, who administered an emetic, and, at the moment when vomiting was about to commence, clapped a handkerchief tightly over the mouth of the child. I was reminded of the source from which was obtained a procedure I have invariably instituted in such cases, and never without success. Very many years ago, that best of practitioners, Dr. J. P. Evans (then residing in Arkansas), when on a visit to his native place, Tazewell, Tennessee, was called to the country to see a child with a foreign substance in its nostril, which had held its position in spite of efforts for its removal directed by the professional skill of "all the region round." On the way, the Doctor was saluted by an aged negro woman, who asked him if he was going to see that child. On receiving an affirmative answer, she said: "Put yer finger 'long side the nose, tother side from the thing, and with yer own mouf over the child's mouf, blow hard, and its bound to come out." He followed her directions, and occasioned the result as she had predicted. R.—*Atlanta Medical and Surgical Journal.*

Styptic Cotton.

Dr. Rohland, of New York (*The Medical Record*) has prepared a styptic cotton (*Gossypium Stypticum*) that promises to be a usefu addition to the means of arresting passive hemorrhages from ex[1] tensive surfaces. It has the advantage of cleanliness and con-

venience, and possesses no irritating properties. It is prepared by boiling the cotton in a solution of alum and gum of benzoin, and, after the cotton is dried and picked, it is saturated by perchloride of iron. It is put up in boxes of convenient size.—*Ibid.*

Inoculation of Tuberculous Matter in the Human Subject.

Messrs. Paraskeva and Zallonis, of Syra, in Greece, have published in the *Gazette Medical de Paris*, April 27, 1872, an account of five experiments on rabbits, wherein tuberculous matter, either mixed with the food or inoculated, excited deposits of the same kind in the lungs, thus confirming Villemin's investigations. The authors attempted besides a bolder experiment, and inoculated a fisherman of fifty-five years of age with tuberculous matter on the upper part of the thigh. This man was suffering from gangrene of the great toe, in consequence of obliteration of the femoral artery. He steadily refused amputation, and the authors considered themselves justified in undertaking the experiment. The patient died thirty-seven days after the inoculation, and had never been ill before in his life. Seventeen tubercles in the first stage of development were discovered in the apex of the right lung; two were of the size of split peas, and the others as large as mustard seeds. Two more tubercles were observed in the apex of the left lung. The liver looked healthy, but presented two tubercles on its convex surface, of the size of peas. The authors conclude that they have proved their point, but it should be recollected that, in ordinary autopsies, tubercles are often found when their existence from the history could hardly have been suspected. As for animals, it may always be asked whether we can, in all cases, conclude that the phenomena observed upon them would be the same upon man.—*Lancet, June* 8, 1872.

Erysipelas.

Professor Broca has lately recommended a fresh plan of treatment, which, according to *L'Abeille Medicale*, he has often successfully employed at the commencement of the disease. This plan is to apply a layer of collodion upon the skin above the part attacked. The layer of collodion, which is to be on sound skin, should be from six to eight centimetres wide, and form a complete circle, separating the healthy skin from that attacked. A slight circular compression is thus produced, and it is rare for the disease to cross this barrier, behind which it speedily fades. The part should be examined once or twice a day, in order at once to repair any fissures, and the collodion should be quite pure, without any oil, which is sometimes added to it.—*The Doctor.*

[A very old plan revived. Ed.]